

CEPAL Review

Director

RAUL PREBISCH

Technical Editor

ADOLFO GURRIERI



UNITED NATIONS
ECONOMIC COMMISSION FOR LATIN AMERICA
SANTIAGO, CHILE / AUGUST 1979

CONTENTS

The future of the international railways of South America. A historical approach Robert T. Brown	7
The basic needs strategy as an option. Its possibilities in the Latin American context Jorge Graciarena	39
The process of modernization in Latin American agriculture. Gerson Gomes and Antonio Pérez	55
Plans versus planning in Latin American experience Carlos A. de Mattos	75
The Brazilian economy: option for the eighties Pedro Sampaio Malán	91
Contemporary protectionism and the exports of developing countries Gary P. Sampson	103
Economic Policy: Science or Ideology? (Part Two) Carlos Lessa	119
Some CEPAL publications	145

Economic Policy: Science or Ideology?

Part Two

*Carlos Lessa**

The two parts of this article (the first was published in *CEPAL Review*, N.º 7) constitute a systematic attempt to present and analyse critically the major approaches in 'official economics' to the theory of economic policy. Part One was devoted to L. Robbins; this part seeks to outline the foundations of 'welfare economics' and the latest neoclassical positions on the construction of econometric models.

The author argues that the various neoclassical approaches represent attempts to overcome the incompatibility of the two main objectives pursued on the one hand, to construct a universal and a historical scientific theory to justify the *status quo*; and on the other, to understand the real world and its changes in order to provide the dominant interests with the operational means for them to be able to tackle economic policy problems effectively.

'Welfare economics' and the 'black box' of econometric models are two clearly different theoretical and practical alternatives, although divergences exist with them. The author explores the two, and their variants, in detail, and stresses the similarities between them which stem from their common neoclassical origins and are primarily visible in their views on the nature of the State and society, and the roles these should play in economic policy.

*Former staff member of the Latin American Institute for Economic and Social Planning and professor in the University of Campinas (Brazil).

IV Welfare economics or the test of a knowledge/ effort minimax

"Fantasy never leads to madness; what leads to madness is in fact reason. Poets do not go mad, chess players do. Mathematicians go mad, as do bookkeepers; but it is very rare for creative artists to go mad."

(G. K. Chesterton)*

When, at the beginning of this study, we used the simile of a tropical jungle entered by an unwary traveller, we were aware that tropical jungles vary both in types of vegetation and in density. We are now about to enter the thickest part of the jungle, where the vegetation shuts out every last ray of light and the lianas and creepers can entangle and immobilize the traveller. Welfare is a formal jungle; it is hypertrophied empty discourse. One must be a very experienced explorer not to lose heart in this stretch of the forest; while lack of experience may lead to intellectual death. Since I do not believe that I fall into either of these categories, I shall try, with a caution learned from earlier attempts, not to pause too long in this lightless zone. This section should be taken as a warning sign rather than as a map for crossing this part of the jungle.

The planting of this track of forest began with Bentham's utilitarianism, which shows its great age.¹ Robbins gives a very precise description of this initial approach: "A theory of economic policy, in the sense of a body of precepts for action, must take its ultimate criterion from outside economics. This criterion the English Classical Economists found in the principle of utility, the principle that the test of policy is to be its effect on human

*From the Spanish translation by Alfonso Reyes of *Orthodoxy*, chapter II, "The maniac", Madrid, Casa editorial Calleja, 1917, p. 26.

¹Robbins classifies Bentham in the group of "English classical economists". In our opinion, Bentham is rather a precursor of neo-classicism, since he postulated the construction of a science of man based on the calculation of utility. See H. Denis, *Historia del pensamiento económico*, Ed. Ariel, Barcelona, 1970, pp. 184-187.

happiness. All action, all laws and institutions were to be judged by this test. If their consequences were such as promote more happiness (or eliminate more unhappiness) than was conceivable from other actions, laws or institutions, they were good: if not, then they were bad."² In capitalism's heyday of self-infatuation in the first half of the nineteenth century, utilitarianism with its elementary manicheism was used to show that the 'invisible hand', vouchsafed by the gendarme-State, would ensure an optimum for everyone and, by aggregation, for all. Neo-classicism, at peace with itself, unconcerned with aggregate happiness, could develop micro-economic analysis in such a way that each of the consumers, producers and owners of factors could have perfect advice in order to find his particular optimum in a system of perfect competition.

The painful spectacle of industrialization, the social tragedies which provided such powerful inspiration for nineteenth century literature, which underlay the proposals for social assistance policies as well as the utopian formulae of many reformist thinkers based on the assumption that the age-old appeal to the good will of men could no fall on deaf ears, did not lead 'official economics' to abandon its utility hypothesis. However, once the rose-coloured spectacles had been removed, the subsequent advance of capitalism, industrial concentration, heightened nationalism, intervention in the market, increasingly sharp cycles of prosperity and depression, wars, growing social tensions and an increasingly powerful, growing trade union movement, capable of criticism and of linking up with political movements, began to leave their mark on neo-classical thought. These 'adjustments' in the neo-classical corpus can, in my opinion, be classified in two general categories of responses.

The first, 'scientific' *par excellence*, consists in adjusting the positive theoretical corpus and making it more rigorous. When pushed by history, the neo-classical thinker engages in a process of questioning within the confines of his science. This 'self-internalizing'

operations of retreating into his shell, sincerely concerned by the need to eliminate imprecision, in turn leads to new 'states of scientific tranquility'. Then, as history accelerates—social revolutions, greater development of the process of accumulation, complex forms which surpass the limits of market and nation, the omnipresent intervening State, awareness of underdevelopment, decolonization, etc.—it continues to push him, and he becomes even more inward-looking in his questioning of his 'science'.

By rejecting history as a process endowed with its own internal logic, he grasps only the external manifestations of the movement; he takes into account only ideographic history. His investigation reveals a system which is increasingly far from the ideal archetype which he constructed in tranquil times as an apology for the system. This bothers him, naturally enough. In his anxiety he repeatedly questions his 'science'. Since he retains his ideal of a positive science, this questioning, while on the one hand dispelling some naive beliefs, on the other creates fresh ones. As the system strays further and further from the premises of the initial ideal apology, an increasingly complex effort must be made to maintain a minimal relationship between apologetics and actuality, as perceived at the level of (increasingly changed) appearances. The result is a process leading to an ever greater lack of realism. Logical tools become increasingly complex, an attempt is made to find analogous models in the development of other sciences, and more complex mathematical forms are called for. As we shall see, this dialectic brings neo-classical thought to terrifying levels of unrealism.

The second type of response consists in delimiting a 'territory' and determining the 'conditions of use' of positive science; however, aware of the unrealism of the conclusions obtained at this level, the thinker tries to find an 'input' from reality or to provide a scientific 'product' for reality. The 'input' may be a mere collage (interdisciplinary approach) or may be to the effect that 'this is a value-judgement area'; the product is usually of the reformist type; reality must be put right so that it behaves 'scientifically', since we are scientifically sure that reality is wrong. Some thinkers combine

²L. Robbins, *The theory of economic policy*, London, Macmillan, 1953, p. 177.

'input' and 'product' and mix answers of the first type with answers of the second.

Finally, some authors very honestly confess their inability to provide a coherent answer, to 'shed light' on reality with their science, and this can also be found in answers broadly categorizable as 'appealingly modest positivism': economics is still embryonic. ('Washing one's hands' is a healthy formula.) Instead of being alarmed by the short lifespan of his answers, the health-conscious scientist sees in this an indication that he is progressing by successive approximations from error to truth, or more affectedly, attempts to turn 'official economics' into an instrument for 'seeking the truth'.

At the crossroads of this awful dialectical movement lies the thickest part of the tropical jungle, and despite the escalation of unrealism, sterility and frequent moments of delirium and epistemological suffering, we believe that the jungle will continue growing; history does not stop. The first neo-classical reading of classical liberal thought saw in the harmony of personal and collective interest, achieved by a system of perfect competition through the search for maximum individual benefit, the explanation of the identity of wealth and welfare. This conclusion was strengthened by hedonism as a moral system.

However, neo-classical theory, whose ethical basis lay in hedonism, was running into a serious problem. By the end of the nineteenth century, industrialization has already created a powerful trade-union movement which was closely linked with political processes of a more or less radical nature in relation to the social system. Through social legislation, changes in labour law, etc., the labour force was objectively questioning the perfection of an income distribution based on the free play of market forces. Objectively, it was questioning hedonism as a moral philosophy, and neo-classicism had to retreat into its shell in order to dissociate itself from an intransigent defence of income distribution sanctioned solely by the free play of market forces. Inasmuch as hedonism made the perfectibility of the system of free competition and distribution a single thing, neo-classical thinking was unable to reconcile an intransigent defence of free

competition with the admission of some partial redistribution of income. At the theoretical level the two concepts—free competition and personal income distribution—had to be partially dissociated in such a way that the former could be defended while admitting some correction of the latter, without the theory becoming incoherent. This operation was essential to avoid discrediting the entire construction.

Another route led to this same problem. The growth of the State and the more-than-proportional increase in public expenditure—to cover either military spending, are more complex public administration or certain incipient social programmes—was creating a problem of sources of tax revenue. During the nineteenth century the Italian financial school had tried anxiously and assiduously to find a system of taxation which would satisfy the ideal requirements of the neutral tax doctrine. This doctrine represents the tax system most in keeping with the free play of market forces; if we accept the perfectibility of the mechanism, the taxation system designed to finance the modest expenditures authorized for the State by this doctrine should be such that they do not affect the perfect mechanism or infringe the hedonist doctrine. Like Diogenes searching for an honest man, the Italian financial school was seeking a neutral tax without being able to find one; however, they thought that direct taxation was more neutral in relation to market mechanisms than indirect forms of taxation. At the real historical level, States tended to multiply forms of direct taxation and move towards a progressive personal income tax. Together with the growth of social spending, this development may be viewed as fiscal intervention in personal income distribution.

The question outlined here lies at the origin of welfare economics. When defining the objective of economics, drawing on long-standing references, Marshall stressed the "concern to maximize social welfare". This was how Marshall viewed the goal of economics in his classic definition. He was inspired by a great hope: that a science with such an objective might be able to define an ideal economic policy which would be acceptable to all and, in sum, pacifist, since it would bear the stamp of

positive science. The loud denunciation of the new social problems stemming from industrialization and the questioning of the system's foundations could (it was hoped) be "dealt with" by positive science, which should scientifically define and elucidate the maximization of social welfare. (Economics would indicate the ends and means.) Here, then, political economy is being reduced to the theory of economic policy.

It is true that for each person to follow his personal interest, in an economy organized in conditions of perfect competition in each of its markets, leads to the best possible allocation and use of the factors of production. A good overall solution is guaranteed from the standpoint of wealth; but what is the relationship between wealth and welfare? For Marshall, there was an immediate answer to this question: collective welfare is the aggregate result of individual welfare and is obtained through the maximization of national income.³ This in turn depends on the perfect allocation and use of factors, i.e., the maintenance of the conditions of perfect competition in the different markets. This is an odd answer in view of the fact that Marshall was sympathetic to Fabianism.

The ideas on this English movement included a progressive programme of social reform—in a democratic framework—including increasing State intervention aimed at correcting the inequality of personal income distribution. But the inertia of conservative 'scientific' thought was so enormous that Marshall—in flagrant conflict with his Fabian sympathies—repeated the age-old answer of chemically pure liberalism, thus remaining faithful (at the scientific level) to the rose-coloured view of yore, his Fabian learnings notwithstanding.

Marshall's answer, although intended to pacify, created a great confusion. Acceptance of aggregate utility as the category to be maximized allows two different 'rational' ap-

proaches, both illustrated by the typical positions outlined above.

One consequence of the first type of answer: aggregate welfare is the sum of individual welfares. The maximization of the national dividend, Marshall's criterion, does not guarantee the maximization of welfare, since individual incomes are different. If marginal utilities are comparable, the point of maximum welfare must coincide with a specific income distribution: this raises the problem of interpersonal distribution. And this was the question raised by Pigou in 1920 in *The Economics of Welfare*. What is the right distribution? The answer is easy; the more egalitarian the distribution of income, the greater the level of welfare. Following the hypothesis of diminishing marginal utility of money income, aggregate social utility would increase with the transfer of income from the rich to the less-well-off. Pigou's answer settles two problems of neo-classical theory:

(a) it retains the perfectibility of the price mechanism, since markets continue to be in conditions of perfect competition. This mechanism is perfect for resource allocation and use in relation to any given distribution of income among persons;

(b) it incorporates in its discourse the redistributive role of the state, which could base the tax burden on direct progressive taxation and undertake social expenditure in favour of the poorest strata of society.

Hobson points out one consequence of the second, more radical type of answer: there is a concept higher than economic welfare, namely, human welfare. Some forms of consumption are degrading, some kinds of work are spiritually impoverishing and physically humiliating. Ethics is never out of place in economic facts, the facts themselves are at once economic and ethical.⁴ Starting from the neo-classical categories, Hobson romantically stated that the system had to observe a morality of respect for and preservation of the dignity of the human

³Marshall refers to the national dividend. At the economic policy level, he believes that the effect of indirect taxes and of subsidies could increase aggregate utility.

⁴J. Hobson, *Social Problems* quoted by E. James, *Historia del pensamiento económico en el siglo XX*, taken from the Spanish translation by Enrique González Pedrero and Julieta Campos de González Pedrero, Mexico City, Fondo de Cultura Económica, 1957, p. 142.

being. The result was the proposal of more radical social reforms.

Following novel paths two neo-classicists, exploring Marshall's welfare function, become dissatisfied—at the level of their own discourse—with the liberal programme. It may be admitted that neither the egalitarian distribution of income nor the moral preservation of man in consumption and work are goals of the system which inspired neo-classical economics.

The *impasse* created by Marshall's question and the uneasiness stemming from the scientific answers it received took neo-classicism along two different paths, both of which assume that it is impossible to measure utility and that there is no economic meaning whatsoever in interpersonal utility comparisons. The first solution was Robbins' formalized approach, which we have already examined and which reduced economics to the practical level and defined any questioning of ends as having nothing to do with economics. (We have already had occasion to look at some consequences of this position.) The second type of solution lay in a thorough exploration of the arguments of Edgeworth and Pareto concerning the impossibility of interpersonal comparisons of utility, the major proposition of which is the absence of an endogenous criterion whereby it may be affirmed that the utility of the 'nth' unit of income of a rich person is greater or lesser than or the same as the 'nth' unit of income of a poor person. This position, which initially represented a hymn to individual subjectivity, opens the way to the neo-classical festival known as the 'new welfare economics'.

Robbins' solution produces hypertrophied, purely formal positions, and proposes an ethics which is highly attractive to technocrats. However, it had a great defect from the standpoint of positive science: it was based on a formal deductive method. For the positive mind, Pareto's path appeared much more scientific and was therefore followed by modern neo-classical thought, with extremely odd consequences as we shall see below. A serious question remained unsolved: was it scientifically possible to find a process for the maximization of the economic system? The grey-

beards are reluctant to forego their 'spiritual power' and become the handservants of the 'temporal power'.

The starting-point of this interesting discussion lies in Pareto's general equilibrium model presented in his *Manual d'Economie Politique* (1906). Broadly speaking, this is the Walras' model, with the original hypothesis of preferences. Pareto defined an optimum as follows: "A position made up of a set of non-comparable magnitudes may be described as a maximum when none of these magnitudes can be increased without decreasing another".⁵ From the standpoint of the family what was characteristic about Pareto's criterion was that once the maximum economic satisfaction or desirability of a basket of goods had been obtained, the family could not rise to a higher level of supply without another family's economy dropping to a lower level of supply. It may be seen that there is an infinite number of Pareto optima. There is nothing surprising in this, since the Cambridge School questioned the interpersonal comparability of utility.

"As concerns the economic system as a whole, the optimum positions for both production and consumption are those (naturally infinite in number) where there is an optimum distribution among the different subjects of the quantity of goods belonging to efficient positions."⁶ The Pareto optima are the same as the results achieved by the market system in perfect competition: "To know which of the optimum positions is reached by competition depends on one thing: the initial distribution of productive resources and, in the absence of political redistributive activity, the final distribution of rent among all the economic subjects ... the Pareto criterion cannot be used to compare the optima of two different situations".⁷

The determination of optimum economic satisfaction with the necessary condition relating to the allocation of factors for a specific distribution of income, allows an infinite number of optima. Thus this criterion overcomes the thorny problem of income

⁵C. Napoleoni, *Il Pensiero Economico del 1900*, p. 39.

⁶*Ibid.*, p. 40.

⁷*Ibid.*, p. 40.

distribution: any is optimal. The Pareto optimum is certainly optimal as a conservative argument.

Pareto's optimum is as conservative as can be, since it focusses on the impossibility of increasing output of one good through the reallocation of productive factors without decreasing the production of another good. But cannot this criterion be improved on?

Hotelling considers that an economic policy measure increases wealth if it benefits one economic subject without decreasing the wealth of another.⁸

Kaldor answers this question by stating that an economic policy measure (redistributive or otherwise) is fully justifiable when the gains of the group which benefits are greater than the total losses suffered by other groups, so long as the principle of compensation for loss is adopted.⁹ Hicks believes that this criterion is correct, even without taking into account the principle of compensation.¹⁰ Scitovsky criticizes the principle of compensation because it is implicitly but gratuitously based on a value judgement: the idea that the losers are socially more deserving and that the earlier situation was worth maintaining.^{11, 12} Furthermore, Scitovsky shows that the principle of compensation may increase the unfairness of income distribution. If the economic policy measure benefits an upper strata, the latter will be in a position to "bribe" the lower income group. As a measure of the unrealistic atmosphere in which this argument is carried on, Scitovsky accepts a complementary criterion: the prevention of this kind of bribery. This does not prevent Napoleoni from considering that "the importance of the Kaldor-Hicks criterion is clearly enormous, because it

greatly broadens the sphere of economic policy acts which can be judged objectively and without the use of value judgements".¹³ Literally, the Kaldor-Hicks criterion leaves the neo-classical position open to accepting any type of intervention whatsoever on condition that it operates through the perfectly competitive market. However, this will be a 'scientifically' acceptable rape: scientifically speaking, 'l'honneur est sauve'. The acceptance of intervention if carried out through the market supports the idea that indirect economic policy instruments (which work through induction) are 'scientifically' permissible.

An odd equilibrium is reached at this point: following the Marshall-Pigou line one arrives at the unlikely ideal of an egalitarian income distribution; while the Pareto-Kaldor-Hicks line leads to an elegant acceptance of intervention. These are certainly ironic results for a scientific corpus committed to the defence of the *status quo*, which in fact merely defends something which is already historically passé: the 'system of perfect competition'.

Just as the 'ancien régime' of cardinal utility was exploded by neo-classical arguments, the house of cards of the 'new régime' based on ordinal utility (elegantly developed by Hicks' consumer theory) provoked opposition within 'official economics' itself.

As set out by Hicks in *Value and Capital*, the theory of the consumer is static, operates with homogeneous goods and adopts the hypotheses of choice among infinite combinations of goods (omniscience of the consumer), coherence (invariable pursuit of preferred choices), insatiability (permanent desire for those goods), etc. ...¹⁴ Such an unrealistic basis sowed doubt in the neo-classical ranks. Consumers deal with singular goods; many of the goods acquired are fixed (housing, light, transport, etc.); the image of the consumer as a computer instantly switching from one equilibrium point to another is strange, to say the least. What about the force of custom? Is not choice perhaps a problem which depends more on the conditioning

⁸H. Hotelling, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates", in *Econometrica*, Vol. 6, July, 1938.

⁹N. Kaldor, "Welfare Propositions of Economics and Interpersonal Comparisons of Utility", in the *Economic Journal*, London, vol. XLIX, September 1939.

¹⁰J. R. Hicks, "The Foundations of Welfare Economics", in the *Economic Journal*, London, Vol. XLIX, December 1939.

¹¹See T. Scitovsky, "The State of Welfare Economics", in the *American Economic Review*, Vol. XLI, June 1951, N.º 3.

¹²E. James, *op. cit.*, p. 563.

¹³C. Napoleoni, *op. cit.*, p. 42.

¹⁴J. R. Hicks, *Value and Capital*, Oxford University Press, second edition, 1946.

rather than the calculations of consumers? Needs are not one-dimensional, they are grouped in combinations of desires for different goods, etc. ... These and many other minor objections did not prevent Professor Hicks from publishing a new text in 1956 which reiterated his 1939 theory with greater formal elegance.¹⁵ And the thrilling debate continued. Consumer theory could be derived from observation, according to some; for others, including Professor Hicks, introspection was necessary: this had to be carried out within the theory itself, which, of course, led to introspection *in vacuo*.

Seligman summarizes this position: according to Hicks, "one had to start with the 'preference hypothesis' in order to separate current price effects from the complex matrix of forces that influenced consumer behaviour. The objective was to note how the consumer reacted when only prices and incomes were taken into account. Nothing else really mattered, nor was it necessary to prove the validity of the 'preference hypothesis', since its usefulness was entirely pragmatic: one was interested solely in the richness of the deductions it yielded. Consequently, demand theory became nothing more than the economic application of the logical theory of ordering".¹⁶

However, the festival of new welfare economics had not exhausted its possibilities: the show goes on. Samuelson comes on stage with this theory of revealed consumer preference, which stresses the epistemological value of observable data. Set theory provides the concept of weak ordering and strong ordering of related points. Assuming that the consumer is 'committed' when he comes to the market, with already defined preferences (strong ordering), all that needs to be known about his behaviour in the market is already available. (A very elegant way of highlighting the level of appearance, so dearly beloved to the positivists.) If the consumer maintains his preference in the market, even when the price of the good rises or initially is above that of other goods, he is said to have a revealed

preference (to use Samuelson's term). As a good and loyal American, Samuelson had to accept this revelation of the sheep-like behaviour of the consumer: previously considered a 'dictator', he has become an 'object' to be manipulated by mass consumption and seductive advertising methods. Thus Samuelson saw in Hicks approach (the consumer arriving indifferent at the market) a weak ordering which he contrasts with his more realistic strong ordering of preferences. (Down with the national sovereignty of the consumer!)

This is only part of Samuelson's logico-mathematical construction in *Foundations*.¹⁷ His main ambition was to combine traditional neo-classical theory with the utmost logical and mathematical precision, though the use of mathematical instruments which would allow the empirical verification of propositions; otherwise, it would be theory for theory's sake, and without functional meaning. The economist's job was to show, in his general theory and its specialized branches (fiscal, foreign trade, etc.), the existence of "formally identical meaningful theorems ... each derived by an essentially analogous method".¹⁸ Meaningful theorems are verifiable hypotheses, whether important or trivial.¹⁹ The fundamental hypotheses which form the basis of his theory are the description of a maximum and the determination of stability conditions. Equilibrium implies a maximizing or minimizing problem; thus the theoretical problem consists not only in determining the maximum but also determining the secondary conditions for obtaining the maximum.²⁰

Samuelson's approach to welfare economics is an attempt to attain the greatest possible scientific objectivity, for which purpose, he makes use of a series of methodological refinements in methods of mathematical calculation: linear and non-linear programming, input-output analysis, etc. Recognizing the discrete nature of observable facts, he can use the

¹⁵J. R. Hicks, *A Revision on Demand Theory*, Oxford University Press, 1956.

¹⁶B. Seligman, *op. cit.*, p. 411.

¹⁷*Foundations of Economic Analysis*, Cambridge, Harvard University Press, 1948.

¹⁸*Ibid.*, p. 1.

¹⁹Samuelson adopted the so-called 'operationalist' neo-positivist position. The concept of method should be made explicit in terms of the series of operations involved.

²⁰B. B. Seligman, *op. cit.*, p. 424.

calculus of finite differences, etc. ... Altogether, the greatest possible facelift for the aging neo-classical construction.

Samuelson pragmatically accepts the incorporation of value judgements in welfare economics, adopting Bergson's position:²¹ "In contrast with theories of welfare economics, Bergson explicitly accepted value judgements. These might be determined, he said, by some higher authority. Indifference curves could be worked up to establish a social welfare function by which to judge whatever economic policy was to be proposed".²² Using the Bergsonian function, economic policy objectives could be measured by a social welfare function; this function should reflect individual and collective welfare and also assess the way in which this welfare was distributed within society. With a function of this kind, economics merely produces the theory of economic policy, and confines itself to attempting to estimate, in welfare terms, the probable consequences of government action. This sounds very objective and worthy to Samuelson: a scientific, pragmatic approach. Using one of these functions it is possible to 'simulate' economic policies. For Samuelson "it is a legitimate exercise of economic analysis to examine the consequences of various value judgements, whether or not they are shared by the theorist".²³ In principle, each individual can vote against or in favour of or abstain on how economic policy criteria affect the variables in his welfare function (this is pompously called the ordinal method of highest, lowest and indifferent valence). This Bergson-Samuelson path leads to the famous economic policy 'simulation models', one of the economist's toys in his technocratic dream.

The jungle is virtually impenetrable:²⁴ a

²¹A. Bergson, 'The Social Welfare Function', in *Readings in Economic Analysis*, Cambridge University Press, 1950, reproducing the pioneering article of 1938: "A Reformulation of Certain Aspects of Welfare Economics", originally published in *Quarterly Journal of Economics*, Cambridge, Mass., 1938.

²²B. B. Seligman, *op. cit.*, p. 427.

²³P. A. Samuelson, *op. cit.*, p. 220.

²⁴The interested reader can consult bibliographies which resemble telephone directories or enjoy works such as J. de V. Graaf, *Theoretical Welfare Economics* (1957).

whole lifetime would not suffice to clear it²⁵ Blaug says that "economists abhor a theoretical vacuum as much as nature abhors a physical one, and in economics, as in the other sciences it is true that theories are replaced by better theories, never merely by contradictory facts".²⁶ Paraphrasing freely, we would add that neo-classical economists love a vacuum, because in it they can always find infinite vacuousness.

All this to hide use value, omitting the concept of value which nevertheless continually and stubbornly springs up in neo-classical discourse despite the repeated reformulation hypotheses of the measurability and interpersonal comparability of utility.

How do the neo-classical economists evaluate the results they have achieved in the jungle of the new welfare economics? Do they think they had their moment of glory, when Political Economy was reduced to the Theory of Economic Policy? Can economics, using its own methods, indicate goals which are entirely free of axiological contamination, as well as means to attain them? Has economics borne its brainchild, a general method to elucidate policy, thus bringing it out of a pre-scientific stage? Has the new welfare economics succeeded in constructing economic policy as a science of precepts for the rational direction and development of the economy, as Menger proposed?²⁷

I believe that the neo-classical enthusiasm for welfare economics has passed through a cycle. In its initial phase of prosperity the most ambitious proposals were made and it was believed that that reduction would be feasible; then came a phase of depression, when despite greater formal elegance there was a basic distrust and disenchantment with regard to the relationship between the vast edifice and its basis in reality. This distrust caused some of the more enthusiastic adherents of welfare gymnastics to desert the ranks (Samuelson is currently numbered among the institution-

²⁵With the secondary restrictive condition of adopting, in the biographic model, the sub-hypothesis of remaining clear-headed.

²⁶M. Blaug, *op. cit.*, p. 605.

²⁷C. Menger, *The Method of Economic Science*, Turin, UTET, 1937, p. 31.

alists; Kaldor has renounced the sins of his youth, etc.). None of this prevents the jungle from continuing to grow, while waiting for a new logical and mathematical refinement which will allow it to blossom even more fulsomely and unrealistically.

Here is what Mrs. Hicks has to say: "Thus the discipline of economics can be divided into two distinct processes. In the first place there exists what we may call the positive sector, the business of which is to describe the economic institutions of the society (for example, the organization of industry) and to analyse the causal sequence of the reactions of these institutions to economic and other stimuli. This part of the discipline may be described as the anatomy and physiology of economics. Secondly, and no less important, comes the normative sector, the business of which is not merely to determine the correct criteria for policy, but also, on the basis of those criteria, to provide a method of selecting the best among a number of possible economic ends, or alternatively, the economically best route for attaining a given non-economic end. Continuing our medical metaphor this section may be said to deal with the preventive and therapeutic sides of economics."²⁸

Mrs. Hicks obviously trusted in the results of the 'new welfare economics' since she describes the 'correct criteria': (i) to achieve the production optimum with a given system of products, it should be impossible, by re-allocating factors, to increase the output of one product without decreasing that of another; and (ii) to achieve the utility optimum to choose among the production optima the set-up which maximizes satisfactions. Utility is maximized when it is impossible to increase the satisfaction (improve the position) of one individual without diminishing the satisfaction of another, after full allowance has been made for compensation".²⁹ Mrs. Hicks shows her intellectual independence from her husband, since on the question of compensation she is closer to Kaldor than to Hicks himself, although she leaves no room for doubt that there are eco-

nomists prepared to 'provide preventive or therapeutic treatment', armed with the ideas of the new welfare economics.

During the phase of prosperity of welfare economics, some neo-classical authors with an unquestionable liberal axiology toyed with what I call "well-behaved reformism". Meade argues that for the monetary and prices system to function equitably, a fair distribution of income and property must be achieved; inequality makes the system not only inequitable but also inefficient, so that a pre-condition for desiring to preserve it is to take the radical measures to ensure a tolerably equitable distribution of income and property.³⁰ Meade is thinking not of a socialist system but of an optimized market economy.

However, starting from the neo-classical matrix and in close connexion with the welfare discourse, a "badly-behaved reformism" may also emerge, well represented by Lange, who criticizes capitalism for its limited efficiency and attempts to show, using welfare arguments, that only in socialism will it be possible to reduce political economy to the theory of economic policy.³¹ ³² Lange says that the maximum satisfaction of needs occurs when the marginal utility of income is the same for all individuals, and when the apportionment of the services of labour between the different occupations is such as to make the differences of the value of the marginal product of labour in the various occupations equal to the differences in the marginal disutility involved in their pursuit. An egalitarian distribution of income ensures the maximum wealth in a society, with the disutility of any occupation represented as opportunity cost, and putting leisure, safety and agreeableness of work into the utility scale of the individual.³³

³⁰J.E. Meade, "Planning and the price mechanism", quoted by Joan Robinson in *Economic Philosophy*, Aldine Publishing Co., Chicago, 1962, p. 125.

³¹Lange's line was explored by many authors: Dickinson, Durin, Taylor, etc. Many neo-classicists, in disarray in the crisis of the 1930s, made an economic demonstration of the rational necessity of socialism.

³²Oscar K. Lange and Fred M. Taylor, *On the Economic Theory of Socialism*, The University of Minnesota Press, Minneapolis, second edition, 1948, pp. 101-102.

³³G. Stavehagen, *Geschichte der Wirtschaftstheorie*, taken from the Spanish version, Buenos Aires, El Ateneo, 1959, p. 331.

²⁸Ursula K. Hicks, *Public Finance*, Cambridge University Press, 1947, p. 117.

²⁹*Ibid.*, p. 122.

In addition, since capitalism does not guarantee perfect competition, in Lange's opinion the welfare ideal price equals marginal cost cannot be achieved in capitalism, but only in a planned socialist economy. Lange, using welfare arguments and neo-classical pathos, rationally proves the advantages of socialism — an awkward proof because it is 'scientific' and has a sound neo-classical basis.

These reformist types of academic welfare discourse, although innocuous in relation to history, produce what I would call neo-classical distrust which (as a second consequence of its ideological function) progressively empties the initial conception of welfare. Thus Little arrives at the conclusion that there is no objective welfare criterion.³⁴ All criteria have some axiology or other: why not recognize that any approach, in the name of the welfare ideal, depends on axiological choices? Arrow is a sceptical neo-classicist as regards the use of the proofs of the new welfare economics.³⁵ The individual can define his level but society cannot do so; and a criterion of collective welfare cannot be reached by starting from individuals. A higher authority can establish the criterion, but there is no scientific guarantee that it will be rational; in fact, with a democratic system the choice of a system by the majority does not guarantee rationality, because the minority is unprotected. Following this line, Arrow developed (*a priori*) a position of intransigent defence of individual freedom, following in the long tradition of von Mises, Hayek, etc...

Others, like Watson, recognize and regret the fact that welfare economics has failed in its objective of building up a corpus of knowledge capable of providing the foundations for a set of principles for sectoral and economic policy, and has not solved the problem of conflicts of interest.³⁶ Statements of this kind

(phase of depression) should be set against Hicks warning (phase of prosperity) that "...economic positivism might easily become an excuse for the shirking of life issues, very conducive to the euthanasia of our science".³⁷

The incredibly affected discourse, the jargon of criteria of verification of meaning borrowed from logical positivism, the language of models and their functional relations, the 'welfare frontier' of output as an application of the mathematical theory of conditioned maxima, the use of set theory, differential equations, first partial derivatives, etc., discrete series and equations of finite differences, input-output analysis, the inclusion of expectation and probability in theory, etc., and feverish intellectual (and publishing) activity, all led to the following assessment by the unexceptionable Robertson: "My own feeling is that though a great deal of high-grade intellectual power has been expended in this field in the last fifteen years, nothing really very important has happened".³⁸ Others, reflecting the position of the 'modest operator' agree with Meynaud that "although these welfare theories claim to replace the empirical motivation of the authorities by criteria for action which are scientifically above reproach the only conclusion we can draw from them is that they have failed".³⁹ Finally, others like the magnanimous Smithies, feel that they have managed to (a) replace the discredited hedonism by a new ethical base; (b) establish the progressiveness of personal income tax; (c) establish the concept of real national income as a measure of material well-being; and (d) affirm belief in the efficiency of choice.⁴⁰

³⁴I.M.D. Little, *A critique of Welfare Economics*, Oxford University Press, 1950.

³⁵K.J. Arrow, *Social Choice and Individual Values*, New York, Wiley, 1952.

³⁶D.S. Watson, *Economic Policy*, taken from the Spanish edition, Madrid, 1965. For example, with regard to fiscal policy Samuelson in three articles ("The Pure Theory of Public Expenditures", in *The Review of Economics and Statistics*, Vol. XXVI, N.º 4, November 1954;

"Diagrammatic Exposition of a Theory of Public Expenditure", *ibid.*, Vol. XXXVII, N.º 4, November 1955; and "Aspects of Public Expenditure Theories", *ibid.*, Vol. XL, N.º 4, November 1958) concluded that it was theoretically impossible to find an optimizing fiscal policy.

³⁷J.R. Hicks, "The Foundations of Welfare Economics", in *The Economic Journal*, London, Vol. XLIX, December 1939.

³⁸D.H. Robertson "A Revolutionist's Handbook" in *The Quarterly Journal Economics*, Vol. LXIV, N.º 1, February 1950.

³⁹J. Meynaud, *op. cit.*, pp. 124-125.

⁴⁰A. Smithies, "Economic welfare and policy", in *Economics and Public Policy*, Washington, The Brookings Institution, 1955.

Those suffering from historiophobia cannot see the facts. If proof is desired of the accuracy and significance of this assertion, the welfare jungle provides it in unmistakable form.

The abysses which vacuousness opens up to its adherents are frankly fathomless. Here are some chosen examples: the old welfare economics showed that, with a given distribution of resources and a given state of technology, a welfare optimum would be reached in conditions of perfect competition. The new welfare economics put forward the opposite argument, i.e., to every welfare optimum there is a situation of perfect competition in each and every market. This two-in-one proof of optima and perfect competition is considered by some welfare neo-classicists as a 'scientific' justification of a historical, antimonopolistic position. Others, like Boulding, who stick closer to reality (having read the works of Robinson, Chamberling, Schumpeter, etc.) accept that imperfect forms, monopolies and oligopolies, do in fact exist and are useful and efficient for the system (economies of scale, risk control, etc.).

However, intoxicated by their welfare arguments, they suggest that public control should be set up over the operation of enterprises in order to ensure that prices are fixed according to marginal cost. Finally, some, like Graaf, distinguish between potential welfare (as established by theory) and feasible welfare (obtained by taking into account the restrictions stemming from the real situation — the second position described above).⁴¹ Graaf, writing in the 1960s, states that the relationship between the welfare frontier (or point of possible utility) and the efficiency line (position of the alternative welfare positions which can be obtained by redistributive action) should be conceived as follows: the welfare frontier shows the best that can be done — given tastes and methods — in an institutional vacuum; the efficiency line indicates the best that can be done taking into account the prevailing institutional framework.⁴² Graaf

argues that the new welfare economics should be concerned with the comparison of sub-optimal positions: Why the interest in comparing sub-optimal positions? Because in the present world it is extremely unlikely that a society should be situated at its welfare frontier. If external effects did not exist, if the output frontier were independent of the distribution of wealth, and if the relative shapes of the transformation and indifferent curves were 'correct' it would be possible to reach full competitive equilibrium.⁴³

Graaf deplores the real world, because it has overstepped the bounds of welfare economics. Thus the new welfare economics pulls back to the frontiers of the sub-optimal where, like topology — the geometry of geometries and latest mathematical fad —, it will no doubt continue exploring the vacuum's infinite possibilities of emptiness in search of the 'second best'.⁴⁴

What, then, remains of the effort made by the theory of economic policy, apart from the ever-present threat that the jungle will grow ever more tangled? Is there a consolation prize? I think there is:

(a) It succeeded in couching neo-classical economics in an abstruse and awe-inspiring presentation. Apeing science, and with the immense backing of logico-mathematical discourse, use value actually acquired in the eyes of the more ingenuous the appearance of a science, with its intimidating pedagogical attributes (lack of clarity, use of symbols, density, etc.); its adherents thus gained not the wisdom but the trappings of scientists. This is important for official economics.

(b) The heuristic value of its theoretical constructs can always be invoked. Blaug consoles himself by saying: "many economic phenomena have not yet lent themselves to systematic theorizing, and yet economists do not wish to remain silent because of some methodological fiat that real science should consist only of verifiable theorems. A "theory" is not to be condemned merely because it is as yet untestable nor even if it is so framed as

⁴¹J. de V. Graaf, *op. cit.*, p. 81.

⁴²*Ibid.*, p. 81.

⁴³*Ibid.*, p. 80.

⁴⁴Frontiers with hypotheses of finite sets of discrete units admit topological treatment (sic).

to preclude testing provided it draws attention to a significant problem and provides a framework for its discussion from which a testable implication may some day emerge. It cannot be denied that many so-called 'theories' in economics have no substantive content and serve merely as filing systems for organizing empirical information. To demand the removal of all heuristic postulates and theorems in the desire to press the principle of verifiability to the limit is to proscribe further research in many branches of economics".⁴⁵

Here we have a true Pangloss-economist: "all is for the best in the best of all possible theories"; Blang also says that "bad theory is still better than no theory at all". Until the testable implications emerge, the Pangloss-economist, with a maximum of logical and mathematical baggage and accepting, like Samuelson in *Foundations*, the target of proving the existence of "meaningful theories", can always discover in the field of welfare economics (understood as the maximization of input-output relationships) what Seligman has pointed out: "Samuelson found that only trivial results were forthcoming. The conclusion that more production of a good was desirable, or that the same output could be obtained with less input... Equality of income distribution, usually put forth as a condition for optimum welfare, also implied that tastes were alike, etc...".⁴⁶

(c) In a permissive age, it is perfectly admissible to take refuge in omniscience. The old neo-classical economists, with the peace of mind provided by Say's law, could work on their microeconomic abstractions assuming "*ceteris paribus*" conditions. The new neo-classicists, driven up to the macroeconomic level and suffering from vertigo, find an escape route in epistemology which Graaf honestly admits to using — 'an explanatory resource which we shall use occasionally (...) consists in assuming the existence of an omniscient person (the observer-economist) who possesses as much information as we may need concerning tastes and methods, the future and

anything else. This procedure, which not even the most recalcitrant subjectivists would apply in a general manner, does have its advantages. It will enable us to be absolutely sure that the information thus obtained is *correct*, a privilege which the members of the community under study will lack'.⁴⁷ (The heuristic value likewise applies to economists.)

We have not managed to make a clearing in the thickest part of the jungle; the technical jargon and idioms exhaust us and we are completely disheartened by this elaboration of heuristic theories of economic policy which expand the principle of heuristic value until it embraces the author himself. We lack the necessary energy to do so; but we must now take stock of the neo-classical position on the theory of economic policy:

(a) The neo-classicists repeated *urbi et orbi* the excellence of the system of perfect competition. They demonstrated this *ad nauseam*. Using a thousand variations, they progressed from thence to reality. Some ignored it and shut themselves up in their scientific shells; these deserve careful malacological study. Others attempted to reform reality and bring it more into line with the ideal; they called this the theory of economic policy. Others admitted that reality could provide a scale of values arbitrarily fixed by the State or the élites or even democratically. For some, this problem gave grounds for fear, because of minorities. Thus, they progressed towards the most elementary ideological level, becoming propagandists and defenders of the principles of free enterprise, respect for tradition and heaven knows what else. Some became neo-classical socialists, like Oskar Lange. And a whole host of them remain in the jungle, trying to clear it according to the fashion of the moment (which for the time being is topology).

In the final analysis, the concept of welfare is so attractive, so unifying, that it can polarize economic policy in its entirety. Using an aggregate welfare function, society can be organized and made to advance. The concept makes it possible to bypass the system of

⁴⁵M. Blaug, *Economic theory in retrospect*, Richard D. Irwin Inc., Homewood, Illinois, 1962, p. 606.

⁴⁶B. Seligman, *op. cit.*, p. 428.

⁴⁷J. de V. Graaf, *op. cit.*, pp. 12-13.

economic value judgements of the individual, of social groups and of society. How can it be possible to renounce the theory of economic policy? It must exist in some way; but let us proceed.

(b) They all reject history, they are all historiophobic. They all agree on this: positivists, neo-positivists, neo-neo-positivists, etc. This option has been closed: they are on the side of science.

(c) With regard to institutions, they have two positions: they ignore them as a category, being contaminated by historicism; but they accept and serve them with their science. Hence the poverty of their view of the State, dealt with as a subject in theory, neglected in most models, viewed as the payee/payer in the special fiscal part of their science; but also a boss they have to serve.

I call writers on economic policy who take refuge in the naive transposition of Robbins' formula 'modest operators', while reserving the label of neo-positivists for the toiling authors of welfare economics. This classification might be questioned on the grounds that the dominant feature of positivism is respect for facts. I would answer this objection by saying that its main features appear to me to be historiophobia and the claim to atemporal, universal knowledge. Using this knowledge their main aspiration is to advise mankind and society. This was the supreme desire of the inquiry into welfare, hence the name. I think that formalism is a corollary of historiophobia; and also that this has never inhibited the positivists.

In the field of economic policy, neo-positivism has adopted an idealistic stance towards hypertrophied economics, which contrast with the pragmatism of the 'modest operator'. Inasmuch as the existence of policy is based on the dissent stemming from social differences and the diversity of the real situations in which the economic policy agents find themselves, the 'modest operator', who recognizes the existence of the conflict, renounces the arbitration of ends and takes refuge in what he considers neutral territory: means. The neo-positivist is more ambitious. Science can and should identify the ends of economic policy, making use of its own specific

processes. The indication of both ends and means should be based on rational scientific knowledge.

What the 'modest operator' leaves to political arbitration—refusing to underpin it with theories—becomes for the neo-positivist a responsibility of his science. Welfare economics, by establishing the primacy of theory over economic policy, admits implicitly (or at least I have never seen it spelled out) that dissent is inherently and logically tantamount to ignorance. Choice based on power is considered a pre-scientific procedure, in which the disagreement which gives rise to the choice—the arbitration of the authorities—stems from the lack or shortcomings of scientific understanding. Welfare economics relegates the political process to a pre-scientific stage. Conflict in the world stems from the dissent which originates in the lack of scientific knowledge; it is not the product of differentiated and differently-placed classes, groups and individuals with opposing interests. Welfare economics thus reclaims the idealistic torch of the science which set out to bring peace to the world by revealing and propagating *urbi et orbi* its universal truths and values as unifying goals. Welfare economics set out to catechize the whole world.

The scanty results achieved by its prodigious labour did not dishearten official economics in its catechistic calling. To use science in order to set up a screen to hide conflict, surpass the political process and pacify the masses continued to be an objective for many scientific minds. Today, in its new guise of planning, 'official economics' reemphasizes its catechistic vocation with renewed faith. The search for a method by which a vastly enlarged State can carry out its many complex economic policy activities as a coherent, compatible and congruent whole covers up previous failures with a new jargon. The planners will firmly plant the banner of welfare—praised be their persistence.

Both the 'modest operator' and the neo-positivist offer their services to the State. The 'modest operator' offers the optimum means for the power system, and the neo-positivist offers his understanding of the optimum ends for society as whole. Once in possession of

this knowledge, the State can embark on the right economic policy either for the power system or for society as a whole. Neither position concerns itself with the social or political viability of its recommendations. The modest operator thinks this is 'none of his business'; and the neo-positivist trusts that

"sooner or later salvation will be sought in knowledge". Since they do not take account of the problem of feasibility, their recommendations are tinged with a naïveté and unrealism which undermine their efforts. However, this is not the place to discuss this question.

V

The 'black box' of lost illusions

"Mr. Ga had been such a diligent, obedient and long-standing patient of Dr. Therapeutics' that now he was reduced to a single foot. One after another his teeth had been extracted and his tonsils, stomach, one kidney, one lung, spleen and colon removed; and now Mr. Ga's valet arrived, sent by Mr. Ga to call doctor Therapeutics to examine his foot. Dr. Therapeutics carefully examined the foot and, "gravely shaking his head", decided: the foot is too big, no wonder he does not feel well; I will draw the cut the surgeon should make."

(Macedonio Fernández)*

The development of neo-classical thought has always been limited by an ambition and a phobia. The ambition was and will continue to be the construction of a general theory, understood as the deduction of universal, verifiable propositions obtained from the statement or revelation of specific explanatory principles. As these explanatory principles are not immediately given, it is the business of science to bring them to light through a painstaking process of reflection. In addition, since economics is an empirical science, the theoretical construct must be tested empirically in the light of apparent reality. Once the theory has been obtained, precepts about the ends and means of individual and collective behaviour, or in other words the theory of economic policy, can be derived from it. The reduction of political economy to the theory of economic

policy has always been the goal of neo-classical thought.

Marchal states this ambition very precisely: "the efforts currently being made foreshadow the day when political economy will once again be what it originally was: an art, yet without ceasing to be a science; but no longer an empirical art, as in mercantilist days, but an art based on scientific principles and viewed as an application of scientific discoveries... at the conclusion of this evolution, economics becomes genuine political economy, well deserving the name that Montchrétien gave it".⁴⁸

We have already met the phobia — recognition of the primacy of history seems to the positivist a negation of the possibility of theory, a veto on science, and a threat to the dignity of the greybeard.

The development of neo-classical discourse is dramatic. It is lacerated by the drama of the incompatibility between its two self-imposed callings as 'official economics': on the one hand, with the dignity of scientific objectivity, to state in scientific language a set of premises defending the *status quo*; and on the other, to understand the real world so as to create the operational capacity within the system to make it efficient, thus responding to the economic policy problems of the dominant

*From "A diminishing patient", in *Papeles de Recienvenido*.

⁴⁸See A. Marchal, *Méthode scientifique et sciences économiques*, taken from the Spanish translation by Constantino Dimitriu, ed. El Ateneo, Buenos Aires, 1957, p. 6. A more radical presentation of this ambition is given in L. Rogin, *The Meaning and Validity of Economic Theory*, New York, 1956, who argues that the objective meaning of a specific economic theory lies in its recommendations applied to the field of practical policy.

interests in the system it serves. The drama arises —through a theoretical ascesis— from the need to transcend history while at the same time necessarily steeping itself in it. Which of the two missions should it fulfil? Answer: both. How can they be reconciled? a difficult problem: many solutions are possible, but none brings peace of mind.

It is not that the “historicists” shake the positivist’s convictions. He looks with contempt upon their criticism, which in his opinion stems from a pre-scientific stage. His restlessness is due to the comments of his peers — each conciliatory solution hit upon by one positivist provokes methodological comments from other positivists; it is in the scientific community and the academic world that consensus cannot be achieved.

What answer, then, can be given to these questions when they are asked by the powerful themselves? What answer could be given to Robert Kennedy when he stated in 1968: “the gross national product does not take into account the health of our young people, the quality of their education or the happiness of their play. It does not include the beauty of our poetry nor the solidity of our marriage institution, nor the intelligence of our public debate, nor the integrity of our government officials. It does not measure our cleverness or our courage, our wisdom or our education, our compassion or our devotion to our country. It measures everything, in fact, except what makes life worth living”. Even if he refuses to answer such suspiciously pharisaical questions, other issues cannot be sidestepped: how to tackle unemployment? Inflation? The drop in the volume of profits? Declining investment opportunities? The changing structure of international trade and the international monetary system, etc.? (These are questions which certainly refer to meaningful problems in the system within concrete temporal and spatial historical parameters.)

How can these questions be answered while maintaining the universal and ahistorical nature of theory, with its scientific objectivity? To adopt operational pragmatism may be dangerously dysfunctional: it makes the theory unable to prove that the system is rational, sound, necessary, eternal. Only by means of

a universal theory can science give a single reply to these two kinds of questions.

Hence the drama. This is where the sages get their beards in a tangle. And who is responsible? Answer: history. Capitalism does not stop, it changes and evolves as it progresses. In developing it questions ‘official economics’ with increasing urgency while at the same time it wears away the bases of neo-classical ideology. In its advanced stage, capitalism increases its operational requirements, and as it develops it grows further and further apart from the ideal archetype constructed by neo-classicism to justify it scientifically. And at the same time the system clamours insistently for a new apologetics. This increasingly dramatic dilemma facing ‘official economics’ has led it along the most extraordinary paths.

We shall attempt to follow some of these routes, although without any claim to covering all the thousand and one variants.

We have already seen one path, namely, the radical apriorism of Robbins. “Economic laws describe inevitable implications. If the data they postulate are given, then the consequences they predict necessarily follow... If, in a given situation, the facts are of a certain order, we are warranted in deducing with complete certainty that other facts which it enables us to describe are also present ... Granted the correspondence of its original assumptions and the facts, its conclusions are inevitable and inescapable.”⁴⁹ Axioms chosen: those of neo-classicism. This route strikes the positive mind as metaphysical; using apriorism and deductivism, Robbins situates economics as a formal, and no longer an empirical, science.

Let us find another way out. The theory of science and the modern tendencies of logical positivism, in its research into language and the scientific process, may perhaps be brought into service. This path looks promising to the neo-classicists. (At any rate they have started along it, although without arriving anywhere.) From theory viewed as a true explanation of

⁴⁹L. Robbins, *An Essay on the Nature and Significance of Economic Science*, London, MacMillan, 2nd. ed., 1935, pp. 121-122.

the facts or a description of reality, one can arrive at theory viewed as a useful and convenient symbolism, thus attributing it a purely operational function. It is possible to remain at the level of the study of the structure of theory. Laws, in the sense of the necessity of a group of facts empirically proved to possess regularity (a proof carried out by induction in order to pass from the phenomenon to the law) may be accepted as an arbitrary (Le Roy) and operational convention (as a rule for the construction of empirical propositions - Machi). From law to hypothesis. The concept of probability contains incredible possibilities; it is possible to pass from causal laws to statistical laws; interest in the logical structure of economics can be taken to an extreme, with a search for analogies with astronomy, physics and biology, or with forms of engineering or —better still— with mathematics. The neo-classical construct is put together over and over again using all these different approaches.⁵⁰

From the methodological standpoint, neo-classicism has over the last few decades adopted a number of different logical and mathematical methods, each of which leads to what has been described as follows by an analyst who is above suspicion: "During the last quarter of a century powerful mathematical techniques, notably set theory, linear algebra, and topology have been employed in economics at an increasing pace ... the advocates and users of mathematical techniques are convinced, in

⁵⁰The interested reader is recommended to peruse the following: T.W. Hutchison, "The Significance and Basic Postulates of Economic Theory" (1938); F. Machlup, "The Problem of Verification in Economics" (1956); M. Friedman, *Essays in Positive Economics*, Chicago, The University of Chicago Press, 1953; T.C. Koopmans, *Three Essays on the State of Economic Science*, New York, McGraw Hill Book Co., 1957; E. Rotwein, "On the Methodology of Positive Economics", in *The Quarterly Journal of Economics*, vol. LXXIII, 1959; D.F. Gordon, "Operational Propositions in Economic Theory" (1955); E. Klappholz and J. Agassi, "Methodological Prescriptions in Economics", in *Economica*, London, XXXIX, New Series, vol. XXVI, N.º 101, February 1959; S. Shoeffler, "The Failures of Economics: A diagnostic Study" (1955); J. Buttrick, "Towards a Theory of Economic Growth: The Neo-classical Contribution", Noselitz *et. al.*, (ed.), in *Theories of Economic Growth*, The Free Press of Glencoe, 1960; A.G. Papandreou, *Economics as a Science*, New York, Lippincott, 1958.

general, either that these techniques have already led to the solution of key problems in the discipline of economics (say, for instance, allocation of resources in a competitive economy), or that they may be expected soon to contribute significantly to the solution of important problems of economics as a social and policy science".⁵¹ The unrealism of the neo-classical efforts along a particular line always comes up against the criticism of other neo-classicists.

This tendency was noted by Wiener, the mathematician. Very few economists are aware that if mathematical economics wishes to imitate the procedures and not merely the appearance of modern physics, it should begin with a critical review of its quantitative notions and the instruments adopted to grasp and measure them. Wiener argues that technical and social changes (an open-ended historical process) mean that the economic game is one whose rules are subject to major overhauls every ten years, say, and in such circumstances to assign a meaning to the essentially vague quantities in order to give them a precise value is neither useful nor honest, and any attempt to apply a precise formulation to those carelessly defined quantities is a fraud and a waste of time. Wiener finds the spectacle of "official economic science" pathetic, and argues that the success of mathematical physics made the social scientist jealous of its power, but without a clear understanding of the intellectual attitudes which contributed to that power. The use of mathematical formulation has gone hand-in-hand with the development of the natural sciences and has become fashionable in the social sciences. Just as primitive peoples adopted Western fashions of non-national dress and of parliamentarianism, imbued with a vague feeling that these magical rites and vestments might finally bring them up with modern culture and technology, the economists have developed the habit of dressing up their very vague ideas in the language of infinitesimal calculus.⁵²

⁵¹A. G. Papandreou, *Economics as a Science*, *op. cit.*, p. V.

⁵²N. Wiener, *God and Golem Inc.*, taken from *Dios y Golem S.A.*, Spanish translation by Javier Alejo, Mexico City, Siglo XXI, ed., 1967, p. 96.

In 1947, in *Foundations*, Samuelson set out to rectify the neo-classical theorems by correcting what he felt to be a basic methodological error on the part of his predecessors: "only the smallest fraction of economic writings, theoretical and applied, has been concerned with the derivation of *operationally meaningful* theorems. In part at least this has been the result of bad methodological preconceptions that economic laws deduced from *a priori* assumptions possessed rigor and validity independently of any empirical human behaviour".⁵³ Samuelson criticized his 'elders' because they worked with axioms, non-testable propositions obtained by intuition and 'proved' by their self-evidence. Samuelson does not believe that the neo-classical axioms can be considered genuine and worthy of scientific acceptance as long as they are not expressed in a meaningful propositional language. The meaning of a proposition amounts to its verification. Thus, propositions about facts are what should be studied. In *Foundations* he attempted to couch neo-classicism in meaningful language which would make possible the application of the verification principle, and in logical positivist terms, apply the verification principle to all neo-classical propositions in order to separate the wheat from the chaff, winnowing out a scientific residue — meaningful propositions — from the non-verifiable propositions, i.e., those which are not operationally meaningful. On these grounds he rejects, for example, the Hicksian indifference curve and accepts the theory of revealed consumer's preference. Hicks does not put forward a meaningful theorem.

Some neo-classicists feel that this is true of most contributions: "The endogenous variables manipulated in neo-classical models were frequently incapable of being observed, even in principle. But this was perfectly defensible in view of the heuristic function of 'as if' theorizing. Unfortunately, most of the theorems which emerged from the analysis likewise failed to be empirically meaningful".⁵⁴

Samuelson's purpose in *Foundations* was that neo-classicism should furnish mathemati-

cal statistics with a content of meaningful propositions which would allow the econometrician to carry out verification tests. We shall see what econometrics has to say at a later stage; for the time being it should be borne in mind that Samuelson, in the name of neo-empiricism was opening neo-classicism's path to the 'black box'.

With the proposed application of the verification principle to economics, the drama referred to above became (excuse the redundancy) "dramatically" evident. Economics possesses facts provided by history; it rejects axioms in order to seek laws based on real interrelationships; neo-classical thought is thus directed towards the singular and the specific. What it gains in operational terms it loses in its apologetic-ideological function. How can this wretched problem of reconciling the two be solved?

One line of approach is what I call the "honest admission of ideology". There is a long tradition of authors who admit the primacy of ideology. In 1934 Cohen stated: "All those who claim to be indifferent to any consideration about what is fair and what is unfair are in fact making a judgement about what is fair and what is unfair, implicitly if not openly; and those judgements are not better merely because they have never been subjected to explicit critical inspection".⁵⁵

In 1933, Myrdal argued, along the same lines that "this implicit belief in the existence of a body of scientific knowledge acquired independently of all valuations is, as I now see it, naive empiricism. Facts do not organize themselves into concepts and theories just by being looked at; indeed, except within the framework of concepts and theories, there are no scientific facts but only chaos. There is an inescapable *a priori* element in all scientific work."⁵⁶ And he continues: "Nearly all the general terms current in political economy, and in the social sciences generally, have two meanings: one in the sphere of 'what is', and

⁵³P. Samuelson, *op. cit.*, p. 3.

⁵⁴M. Blaug, *op. cit.*, p. 610.

⁵⁵H. R. Cohen and E. Nagel, *An Introduction to Logic and Scientific Method*, New York, Harcourt, Brace & Co., 1934.

⁵⁶G. Myrdal, *The Political Element in the Development of Economic Theory*, London, Routledge & Kegan Paul, 1953, p. VII.

another in the sphere of 'what ought to be'. The word 'principle', for instance, means, on the one hand, 'theory', or 'basis of a theory', or 'working hypotheses within a theory'... But the word 'principle' may also mean an 'aim of conscious striving' or 'chief means for attaining a postulated end' or a 'general rule of action'. The dual meaning of our terms is not accidental: it is the expression of the normative-teleological way of thinking, traditional in the social sciences and, indeed, programmatic in the philosophy of natural law on which they were founded".⁵⁷

Our old acquaintance Di Fenizio also has something to say on this subject: "the methodological precept that the scientist should completely eliminate value judgements from his research in the field of political economy turned out to be an unattainably distant ideal which could doubtfully be achieved".⁵⁸

Robinson follows the same line, inspired by Myrdal's *An International Economy*: "In the midst of all the confusion (of economic theory) there is one solid unchanging lump of ideology that we take so much for granted that it is rarely noticed — that is, nationalism".⁵⁹

Finally, to close this selection of quotations of the 'honest admission of ideology', here is the most honest of them all, C. Wright Mills in a posthumous work on political science where, in my opinion, political economy can be substituted for political science in his discourse: I have always tried to be objective, he wrote, but I do not claim to be disinterested. No political philosopher can be disinterested; he can only presume to be, and I have written this book partly as a political philosopher, which only means: like someone searching, along with his reader, for political guidance. Consequently, I shall try to be explicit about my own political and moral judgements...

First and foremost, a political philosophy is in itself a social reality; it is ideology in terms of which certain institutions and practices are justified and others attacked; it provides the language in which demands are couched, criticism made, exhortations stated, proclamations

formulated and in some cases, political lines determined.

Second, it is an ethics, and articulation of ideals, which at various levels of generality and refinement is used in judging men, events and movements, and as targets and guiding criteria for aspirations and policies.

Third, a political philosophy designates agents of action, and of means of reform, revolution or conservation. It contains strategies and programmes which embody those means and ends. In short, it designates the instruments by which the ideals may be achieved or maintained after having being achieved.

Fourth, it contains theories about man, society and history, or at least assumptions about the composition and working of society; about what are considered to be its most important elements and how they are typically related; their main points of conflict and how those conflicts can be resolved. It suggests the methods of study best suited to its theories. From those theories and with those methods, expectations are derived. A political philosophy tells us how to discover where we are and where we may be heading; it gives us some answers to these questions; it prepares us of possible futures. Thus in examining any political philosophy we should examine it as an ideology, as a statement of ideals, as a designation of an agent or agencies, and as a set of social theories.⁶⁰

Needless to say, although in every generation of economists there are some who state their ideological position clearly and honestly, 'official economics' tends to turn a deaf ear to these frank, extemporaneous confessions. The reasons are clear: while on the one hand it allows a libertarian ideological festival to be held in its name, by attaching value to free enterprise, initiative, etc., a la Hayek, it has the disadvantage of opening the door to proposals for radical reforms and transforming the sacred territory of science into a "vulgar political arena" where ideologies confront each other. The effort to avoid this vulgar tumult gives rise to neologisms such as protopostulates, guiding hypotheses, controllable value judgements, or

⁵⁷*Ibid.*, pp. 19-20.

⁵⁸F. Di Fenizio, *op. cit.*

⁵⁹Joan Robinson, *op. cit.*, p. 124.

⁶⁰C. Wright Mills, *The Marxists*, taken from the Spanish translation by José Luis González, Mexico City, ed. Era, 1964, pp. 3 and 4.

the proposal that value judgements should be treated scientifically and objectively using the rules of scientific procedure. This path leads to the ultra-rarefied atmosphere of metaphysics disguised as a general theory of science.

Another rejected route is the relativism of the sociology of knowledge. This position considers every theory as an expression and reflection of conditions and problems existing in its historical time. Its standpoint consists in asking: why were these ideas or theories produced? But this approach is too horrible for the positivist scientist. In the first place, because it is too close to the concrete and the historical; and secondly, because it is excessively indiscreet, because to ask the question "why did this occur?" almost immediately prompts another extremely indiscreet question "for whom was such and such an idea or theory produced?". The answers to these questions may be of the following type: in order to rationalize the interests of classes or social groups, or to provide political arguments for someone. The positivist thinker does not feel at all comfortable with this kind of answer; he feels threatened as a scientist when identified with the ideologist.

Against the penetrating insights of the sociology of knowledge, positivism puts up a desperate and brilliant defence. One broad line of defence consists in considering, with Blaug, that until 1870 economics was in a pre-scientific stage, in which ideology was quite clear; since then, however, scientific methods have begun to prevail, aimed towards approaching scientific objectivity throughout the following century. Thus, still according to Blaug, economics tends towards scientific status.⁶¹

This is a very seductive way out, since it views the logico-mathematical juggling act not as a sterile theatrical 'strutting and fretting', but rather as a process of successive approxima-

tions by trial and error to its magnificent status as a science. We should not be surprised, therefore, that most of the adherents of 'official economics' adopt this position: progress towards science (which always raises their spirit for fresh juggling prestidigitation).

A parallel route lies in applying, like Samuelson, the primacy of the principle of verification to those neo-classical arguments which allow the formulation of meaningful theorems. For a generalization to be called scientific, it must be verifiable, i.e., it must be subject to an objective interpersonal control. This position borrows from the theory of science all the semantic baggage of criteria of choice, direct and indirect proof, criteria for the control of results, criteria for the elimination of errors of observation, etc. Broadly speaking, using logico-mathematical formalizations, with and eye on subsequent assistance from mathematical statistics, this position attempts to inaugurate the reign of the principle of verification. Econometrics is brought back into the limelight, but it does not appear to be in good health even when vouched for by one of its most illustrious adherents. "We must face the fact that models using elaborate theoretical and statistical tools and concepts have not done decisively better, in the majority of the available tests, than the most simple-minded and mechanical extrapolation formulae." "We do not know which basic assumptions about the behaviour of the strategic decision-making units are empirically relevant. Until we do, model-building will be a branch of mathematics and logic rather than a powerful tool for an empirical science."⁶²

This creates a restrictive situation. Economics asks mathematics and logic for the road to the truth; but the latter state that without economic theory they cannot reach it. Nevertheless, this restriction may be and is mitigated by the always encouraging prospect of 'progressing towards science'. However trivial the results obtained ("people prefer more or less"), however impotent the reign of the verification

⁶¹M. Blaug, Introduction: "Has economic theory progressed?", and chapter 16, "A Methodological Postscript", in *op. cit.* See also T. W. Hutchison, *A Review of Economic Doctrines, 1870-1929*, Oxford University Press, 1953; and J. A. Schumpeter, *History of Economic Analysis*, New York, 1954, in which economic thought is viewed from the standpoint of this idea of 'progress towards science'. For an intelligent refutation, see R. L. Meek, *Economics and Ideology and Other Essays - Studies in the Development of Economic Thought*, London, Chapman & Hall, 1967.

⁶²T. C. Koopmans, *Three Essays on the State of Economic Science*, New York, McGraw Hill, 1957. The first quotation comes from page 212; the second, from page 209, is a quotation from another famous econometrician, Tobin, who adopts the same position.

principle in economics, this approach resembles a calming ritual. (We are verifying, we are following these procedures, we are scientists; and it is scientific to say that someone prefers something more or less.)

These paths all have two shortcomings: they do not fulfil either of the objectives set for 'official economics'. The first two assert the primacy of ideology; the second two provide very slim operational pickings. As capitalism develops, it becomes more impatient: what answer has my long-winded employee (official positive economics) to my questions? I need operationalism and efficiency within the system and a science which proves quite objectively that I am eternal.

Answers such as "I am ideology" or "I am testing and I shall become a positive science" are not sufficient. Impatient capitalism seems to be demanding more and more insistently that its handmaiden, 'official economics', be objective.

Pushed and pulled, 'official economics' took a great step which I consider fundamental for an understanding of its present state in relation to the theory of economic policy. Let us see what that step was.

In 1938, in *The Significance and Basic Postulates of Economic Theory*, Hutchison introduced the verification principle into 'official economics'. He argued that in the empirical sciences, it was necessary to single out the relevant propositions. Any scientific approach by an empirical science is basically characterized by its attempt to answer a specific 'why' with specific tests. The evidence for and against any particular proposition establishes the status and rank of its admissibility in the field of science.⁶³ We have already seen that Samuelson tried to separate the wheat from the chaff in *Foundations* (1947), by delimiting the field: the statement of a problem is not scientific if it cannot be refuted by the facts. However, 'official economics' found difficulties in testing its propositions. Blaug says that "unfortunately, most of the theorems produced

failed to be empirically meaningful".⁶⁴ It is very difficult to verify the descriptive validity of the assumptions of the 'official economics'. How can this problem be solved?

In 1953, Friedman suggested a brilliant answer: "Viewed as a body of substantive hypotheses, theory is to be judged by its predictive power for the class of phenomena which it is intended to 'explain'"⁶⁵ (*Fiat lux*). Blaug emphasizes that: "Economic theory, since the days of Adam Smith, has stood for a mating of *a priori* assumptions and empirical generalizations in the production of 'theories' or hypotheses that yield predictions about events in the real world. However much the assumptions have involved non-observable variables the deductions have been ultimately related to observable variables because economists have always wanted to 'explain', in the sense of predict, economic phenomena as they actually occur. In other words, economists always regarded the core of their subject as a 'science', in the modern sense of the word."⁶⁶

The meaning of 'prediction' calls for clarification. "The structure of scientific prediction is that of a conditional statement, so that if certain facts occur it is predicted that others will occur. ... Prediction should be distinguished from description and prophecy."⁶⁷ There remains an ambiguity, which Friedman himself recognized in his methodological essay: the assertion that it does not matter how much the premises may be divorced from reality. Seligman summarizes the problem: "The validity of an hypothesis, Friedman contended, had to be judged solely by its predictive powers. Conversely, if a prediction were not contradicted by subsequent events, the initial hypothesis was fully acceptable. That is, direct verification was not essential. Thus, any consideration of the 'realism' of one's assumptions in economic theory became irrelevant. The argument was indeed ingenious; there is no need to examine one's assumptions because in any theory which abstracts from a complex reality they will be so

⁶⁴Quoted *supra*.

⁶⁵M. Friedman, *Essays in positive economics*, *op. cit.*, p. 8.

⁶⁶M. Blaug, *op. cit.*, p. 604.

⁶⁷Enrique Fuentes Quintana, *op. cit.*, p. XI.

⁶³Enrique Fuentes Quintana, "Una introducción", in T. W. Hutchison, *Historia del pensamiento económico, 1870-1929*, *op. cit.*, pp. X-XI.

far removed from real conditions that little information about them will be forthcoming."⁶⁸

The position outlined above receives powerful methodological support from the neopositivist doctrine of verification proposed by Professor Popper in *The Logic of Scientific Discovery*. In order to distinguish scientific propositions from non-scientific ones, Popper proposes the test of the possibility of proving their falseness. He assumes the existence of an asymmetry stemming from the logical form of universal statements which, as they are not derived from singular statements, may nevertheless be contradicted by singular statements; Popper asserts that a scientific proposition is refutable (its falseness may be proved), or to be more precise, that the possibility of its being refuted (or its falseness proved) is conceivable. Non-scientific propositions, since they explain nothing, are very probable. Consequently, science does not consist in a collection of observations from which laws and hypotheses can be inferred, but rather in the accumulation of tests for judging whether hypotheses are refutable. A scientific system must be capable of being refuted by experience.

The extent to which Popper's proposal became widespread may be seen by looking through economic analysis textbooks. For example, G. Akley, author of a well-known textbook, says the following: "the economic theorist must first decide (on other grounds) what he considers to be a plausible model ... if the model is capable of statistical testing (and not all models are), the statistician can tell him if it needs to be rejected. However, he can never 'prove' it to be 'the' correct theory. ... The 'other grounds' which determine the plausibility (of a model) to a theorist are presumably its consistency with *a priori* postulates. In the last analysis, these postulates are either (1) the distillation of other empirical tests or observations, often casual rather than systematic; or (2) derived from the assumption of 'rational behaviour' and thus tacitly reflecting an empirical observation (more casual than scientific) that men behave 'rationally', at least in certain spheres."⁶⁹

⁶⁸G. Akley, *op. cit.*, p. 336.

⁶⁹G. Akley, *op. cit.*, p. 336.

In a later work, Friedman discusses the double meaning of theory, shedding light on the ambiguity referred to above: "Economic theory, like all theory, may be thought of in two ways. It may be thought of as a language or filing system, or it may be thought of as a series of substantive empirical propositions. With respect to theory in the first meaning, the relevant question to be asked is usefulness, and not rightness or wrongness (...) Economic theory as a set of substantive propositions contains propositions which are, in principle, capable of being tested because they attempt to be predictive. The definition of a demand curve is theory as language. However, the statement that the demand curve slopes downward to the right is theory as a substantive empirical proposition. It has empirically observable consequences, whereas the definition of a demand curve does not."⁷⁰

Premises which are non-verifiable and divorced from reality, theory as a language or filing system, all this ambiguity is rather discouraging for theory in its role of apologist. Of course there is a clear compensation: it is all very useful operationally or, at least, should be. One step is needed to remove the ambiguity.

For this, let us hear what Papandreou has to say: "By now no one can doubt the outcome of this debate. The 'realism of assumptions' point of view has given way to the 'predictive power' criterion. Meaningful theory according to this criterion, is theory capable of being refuted by reference to empirical data. More nearly correctly, hypotheses which occur in the theory as theorems must be capable (in principle) of being refuted by reference to empirical evidence. If the predictions incorporated in the hypotheses are not falsified by the empirical evidence, they may be adopted by the theorist—but in a tentative manner—for they are always capable of being refuted by new empirical evidence. It has become customary to call such theorems or hypotheses *operationally meaningful*."⁷¹

And now we have reached the last step.

⁷⁰M. Friedman, *Price Theory*, Chicago, Aldine Publishing Co., Revised ed., 1962, p. 8.

⁷¹See A. G. Papandreou, *Economics as a Science*, New York, J. B. Lippincott Co., 1958, pp. 6-7.

Papandreou teaches us that economic theorists are primarily concerned with building models, not theories. And models differ from theories in one important respect: in models, the class of phenomena which we are trying to explain—the relevant social space—is not adequately characterized; in a theory, it is. An interesting consequence of this is that the hypotheses which occur in models can only be confirmed by reference to empirical evidence; they can never be refuted by it.⁷²

Let us pause here and examine what we have just heard: the scientific criterion is predictive power. We must compare the model's conclusions, and not its hypotheses, with reality: "A theory cannot be tested by comparing its 'assumptions' directly with 'reality'."⁷³ The corollary of this position is that in a model, the class of phenomena to be explained is not adequately characterized. Thus, the hypotheses in models can be confirmed by empirical verification, although empirical evidence will not serve to refute them. To summarize: any model of any kind will serve or can serve from the moment that the empirical evidence—whatever it may be—confirms it.

All that we have heard leads to a first interpretation. The traditional apriorism of neo-classical apologetics has been rejected and 'official economics' plans to carry out major surgery, opting for operationality with verifiable models, according to the principle of conditional prediction (reality is what is immediately verifiable).

A major step has been taken towards the 'black box' of theoretical instruments or models. Models can be likened to a carpenter's tools. The carpenter (economist) has planes, saws, spikes, hammers, chisels, etc., (models). The carpenter (economist) will do the job he is asked to do—make a chair, table or counter in white pine or jacaranda wood, plain or carved, in the client's office or in his home. The tools (models) he uses will be suited to the job in hand: for sawing, he will use a saw; for drilling, an auger; for hammering, a hammer; for hard wood, a fine saw; for soft wood, a coarse-

toothed saw; for scrolls, a special gouge; and so forth. If the tool (model) is not suited to the job or the wood (specific economic policy need) the carpenter will use a different tool (another model). Using one or more tools (models) he will do the job (economic policy). There are no bad tools; each job calls for a particular tool. However, no carpenter gets rid of the tools he tried to use but which did not serve for a specific job, since he has the forethought to realize that the tool will certainly serve for another job. So the carpenter (economist) carefully packs them away in his tool box (of theoretical instruments). The economist, like the carpenter, with his box of models, tests them against the empirical evidence and uses them when the test proves positive; otherwise he puts them back again in the 'black box', because he may perhaps be able to use them on another occasion (for different empirical tasks). This, then, is science. Braithwaite states that a scientific theory is a deductive system in which certain observable consequences follow from the conjunction of observed facts with the series of basic hypotheses of the system.⁷⁴ This is true in the case of the natural sciences; for the social sciences, read models and, instead of the general theoretical system, a 'black box' of models.

The grand illusion has been shattered. The economist of the 'official economics' is a carpenter. He is not without words of consolation, however. Millikan, at the end of a series of lectures in which he stated the limitations of welfare economics, affirmed his neo-classicism and recognized the need for and limitations of general and partial models, declared: "But I would favour the construction of a great number of simplified models of economic development alternatives, with a view to illustrating the social consequences of different value systems in relation to intermediate goods, output and economic organization. The purpose of such models would not be primarily to guide government policy but rather to stimulate the greatest possible number of individuals to reconsider their targets, values and objectives in the light of a more realistic

⁷²*Ibid.*, pp. 8-9.

⁷³M. Friedman, *Essays in positive economics*, op. cit., p. 41.

⁷⁴R. B. Braithwaite, *Scientific Explanation*, 1953, p. 22.

assessment of all their consequences.⁷⁵ This fine, modest prayer reminds those who are reluctant to become carpenters that their role in the world lies in the 'black box'. Perhaps Millikan remembered that the father of the Saviour of mankind was a carpenter, and that carpentry can be a great calling.

This is so because in our present interpretation 'theorizing' became extremely difficult. Commenting on the Keynesian consumption function, Ackley pinpointed the difficulty: "Given either an empirical or theoretical basis for asserting something about our marginal propensity, we have a useful hypothesis, which, is shown by repeated experience to be valid, might reach the dignity of being called a theory, or even a 'law'. But to be useful (that is, something other than a tautology), a hypothesis, theory, or law must be capable of being proved wrong. One that must always be true, by definition, is worse than useless — worse because it may delude us into thinking we know something when in fact we do not".⁷⁶

Or else (and this is a second interpretation of these methodological efforts) the Friedman-Papandreou discourse makes theorizing something very easy to do, thanks to Papandreou's semantic distinction between theory and model. The model can be refuted — indeed, it must be refutable to avoid being tautologous; and it can be constructed from different theoretical premises, whatever they may be. What is being tested, and must prove its conditional predictive power, is the model and not the theory. In addition, the model need not be thrown out: it may be useful on some other occasion.

This step provides a vast degree of liberty for theory. Its scientific fate no longer depends on tests aimed at verifying premises; that is the model's problem. The model protects the theory. Papandreou's distinction does not diminish theory, but on the contrary adds to its status, potentially and indirectly. The model is only a tool; its purpose is operational. And

theory? Answer: its role lies in apologetics. Theory has been preserved because now it stands aloof from the awkward level of appearance.

Ackley's reading suggests the impossibility of theory. The Chicago school (Knight, Viner, Stigler, Simon, Friedman, etc.), the American leaders of neo-traditionalism) has a completely different reading. Here is Seligman talking about Knight: "There has always been a peculiar bifurcation in his writing; on the one hand, economic theory was a pure discipline concerned with drawing inferences from a certain set of *a priori* statements and therefore devoid of history or normative implications, while on the other, economic behaviour was conditioned by custom, institutions and the legal framework. Somehow, the two positions were never reconciled, and, in fact, it was the former that has dominated Knight's whole system of thought."⁷⁷ (Theory: *a priori*; behaviour: what is verified — this is a great formula.) With the split between theory and model, Friedman-Papandreou can in fact propose any *a priori* premise (non-verifiable theoretical level) and operate with any model subject to conditional predictive power (verifiable operational level). Theory as non-verifiable apology (eternal); operation involving models (lower level constructions, which are replaceable and adjustable).

The 'black box' of the economist-carpenter also has room for non-verifiable apologetic premises; and the Chicago school crammed it. "The less economic theory has to do with the real world (with its customs, institutions and legal framework) the better" says Chamberlain: into the 'black box'.⁷⁸ Every family has a reserve of capital (including their working capacity), following Friedman's hypothesis of permanent income: into the 'black box': Savage and Friedman, using the Morgenstern/Neumann game theory, starting from the problem of choice and utility/risk, arrives at the conclusion that marginal utility declines with the class of income, although it increases when

⁷⁵M. Millikan, "A teoria econômica do bem-estar e o desenvolvimento econômico" in *Revista Brasileira de Economia*, Rio de Janeiro, year XII, N.º 4, December 1958, p. 75.

⁷⁶G. Ackley, *op. cit.*, p. 312.

⁷⁷B. Seligman, *op. cit.*, p. 647.

⁷⁸E. H. Chamberlain, *Towards a more general theory of value*, New York, 1957, p. 298.

the family unit rises in the social pyramid: into the 'black box'; and so forth.

The inventiveness of the apologetic theorist no longer has its hands tied by the level of appearance. Theory is apologetics; apologetics is theory. The status of theory can now be reserved for the hypothesis of perfect competition in all markets. Everything that neo-classicism first presented as a proposition concerning human nature is now a theoretical component of a system of ideas of filing. Stigler states that '*homo economicus*' is at the same epistemological level as electrons in modern nuclear physics.⁷⁹ Theory and ideology presented as non-verifiable premises with a subliminal message are not important. (Although if repeated *ad nauseam* they become important.) Lowe concludes maliciously that "... one cannot help sympathizing with Professor Von Mises' conclusion that the science of the market must be treated as a product of pure reason, since its 'theorems are not open to verification or falsification on the ground of experience'".⁸⁰

And what does the boss have to say about the 'black box'? I suspect that he is not satisfied. In the first place, because economics has 'got out of line' by refusing to fill its dual function (apologetic and operational) with the trappings of scientific objectivity stemming from a proven general theory; and secondly, because the 'black box' economist's main tool, econometrics, which is dispensed from verifying the apology, has not made the system work efficiently. Here is Lowe disagreeing with Wiener: "Contrary to much facile criticism, the weak spot of Econometrics is not the statistical technique by which it is best known. What proves the source of embarrassment is the underlying theory, formalized in the so-called structural equations and, above all, in the behaviour equations of the models. As a rule these equations formalize the same rigid patterns of behaviour and oversimplified motivational hypotheses which characterize traditional theorizing generally, and in the nature of the case it cannot be different. How else than by postulating certain universal action directives

and expectations can definite macro-states be inferred from micro-premises? Moreover, the computational work imposes severe limitations on the mathematical form of the critical propositions, and it should not surprise us that the basic hypotheses, which determine among other things the crucial "signs" of the strategic equations, differ little from the conventional wisdom embodied in the classical Law of Supply and Demand.

Thus the boss may be discovering that the 'black box' has stripped one saint without dressing up another. In order to divorce apologetics from operationality within the system, 'official economics' is in fact selling old wine in new bottles in passing off the old neo-classical axioms in its econometric behavioural equations. And by divorcing theory from models, it is ceasing to fulfill its ideological function as an apology for the *status quo*, thus leaving the dominant ideology too much in the open. This hypothesis (that the boss is not satisfied) is based on the revival of welfare economics: and what is the neo-new welfare economics? The 'black box' position with regard to its value is categorical: "Welfare (i.e., non-positive) economics is completely excluded from the discussion", according to Papan-dreou,⁸² who also says that "the discussion is limited to scientific constructions involving *systems of propositions or statement*".⁸³

The 'black box' economists, satisfied with their 'box of tricks', appear to have forgotten Millikan's caution (which was so useful to him in his career) since economic analysis is, in a broad sense, social welfare analysis directly or indirectly aimed at shedding light on economic policy questions. Graaf, speaking in the name of the new-new welfare economics (with its suboptimal frontiers), raises the flag and tries to 'go over the top' by showing the difficulty of the new-new welfare economics: In fact, while in positive economics the normal means of verifying its theory consists in verifying its conclusions, the way in which welfare postulates are normally verified consists in verifying its assumptions. The full scope of this difference should be understood. In positive econom-

⁷⁹C. J. Stigler, *The Theory of Price*, Macmillan & Co., New York, 1946.

⁸⁰See A. Lowe, *op. cit.*, p. 44.

⁸²A. Papan-dreou, *op. cit.*, p. vii.

⁸³*Ibid.*, p. vi.

ics, it is often possible to simplify assumptions as bizarrely as one wishes, trusting that their soundness will be proved when the time comes to apply the implicit conclusions to the observation of the surrounding world. This trust is not justified in welfare economics, whose assumptions must be examined most carefully. Each one has to stand up by itself. We cannot allow ourselves to simplify too much, or hope that two wrong assumptions will neutralize one another, if we wish to reach an acceptable conclusion, and yet these procedures are both common and essential in positive economics; hence the proof of the pudding is in the eating, but to judge the welfare pudding requires so fine a palate that we must test each ingredient before cooking it!⁸⁴

To continue this image from cookery—the boss seems to have tried ‘black box’ pudding and not found it to his liking, and the new-welfare economics is asking for time to test the ingredients. And the story goes on; the boss will not die of hunger.

We have reviewed briefly three positions with regard to the theory of economic policy. In what we call the naive Robbinsian transposition, theory centres on the articulation of ends and means. The neo-positivist position, making a massive scholastic effort, attempted to formulate both ends and means within the limits of economics itself. The scanty results and the pressure of reality has led to the third position, the ‘black box’, where a distinction is drawn between theory and model. Standing aloof from these three positions, and from the active and sometimes bitter controversy among peers, let us try to isolate the elements of their common denominator.

In our opinion, from the standpoint of economic policy the most important element consists in a unilateral view of the State as a subject in economic policy. They all see relation between the State and society as a one-way street, with the State as subject and society as object. The prevailing idea is that of science providing a service to the State: supporting means (Robbinsians), scientifically pronouncing on ends an means (welfare theories), and

supplying tested models (‘black box’). With these scientific services at its disposal, the State can directly generate, or enable society to generate, whatever form of results of economic behaviour the State considers desirable. None of these positions views the State as being within society, as both subject and object within the economic policy process. Naturally in the innumerable pages written on the subject there are some references to the contrary. Some authors call attention to customs, interest and institutions; others explicitly speak of pressure groups, extra-economic power relations, etc. But these references—which many authors do not even make—are always tangential to the theory of economic policy, since their conception of the latter does not include restrictions on State actions stemming from its presence within the social fabric. The corollary of this position is an Olympian disregard for the problem of the social and political viability of their economic policy recommendations.

The second common element is the neo-classical outlook underpinning the articulation of these three positions. Robbin’s position is the traditional neo-classical one; the great names in welfare economics are all neo-classicists; the members of the Chicago school, responsible for the ‘black box’, are neo-classicists. The theory of economic policy which emerges from their efforts is, in the last analysis and leaving aside the frills, that of the theoretical and practical perfectibility of an economy organized under the assumptions of perfect competition in all markets, where the micro-economic agents are guided by the ‘extremum principle’, to use Lowe’s expression. The form in which the neo-classical view was transposed to the theory of economic policy varies, as we have seen, according to the position adopted. For Robbins, it lies in the common sense on which his radical apriorism is based; for the welfare theorists, in the behavioural premises about agents taken into account in the construction of their system of equations, and in their criteria for identifying optima; and for the ‘black box’ theorists, in the ingenious premises of their models and the dignity of theory *qua* theory.

Finally, it is worth pointing out that the arguments of the three positions possess in-

⁸⁴J. de V. Graaf, *op. cit.*, p. 3.

ternal 'fractures'. Robbins did not think of the transpositions which would change his theory into the praxiology of the 'modest operator' in any system; the welfare neo-classicists are irritated by the marginalist socialism and the radical reformism which can be derived discursively from their theories; the 'black box' economists are as frightened as the different kinds of post-keynesians at building models for a vastly englarged State. What is oddest about

the neo-classical effort to build a theory of economic policy is this boomerang effect of its constructions. Someone always turns the chosen formula on its head in order to place it at the service of economic policy views which run counter to the liberal view. And what is most ironical is that "someone" is very often an academic turncoat who was brought up in the typical neo-classical tradition.