

TOWARD A THIRD REVOLUTION IN SOCIAL
ECONOMICS
THE PATHBREAKING ROLE OF WALRAS

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This is what a wise spirit can learn from an attentive study of our social organisation. This organisation is not at all to be destroyed, to be made more perfect following Indications from history, political economy, philosophy and all other sciences». LEON WALRAS (1860)

INTRODUCTION : THE MAINSTREAM ECONOMICS GOING THROUGH
A CRISIS OF METHODOLOGY

In a different place, I attempted to show that what is commonly called «Mainstream Economics» is going through a crisis of methodology (Rugina, 1983, 1986) which is mirrored in the fact that we have a divided house among the most prominent economists. Suffice it to mention that in a given issue a Nobel prize winner will express an entirely different view than another Nobel prize recipient. This crisis developed over a long period of time.

In order to understand the very nature, and to see a reasonable solution to, the present - day state of affairs in economic thinking - both in the West and the East - it is imperative to recognize that the economic science like all other natural sciences, has gone through two basic revolutions. Unfortunately, at the time they were forming these two revolutions were not properly qualified and interpreted to make it very clear that they were referring to the different but continuing subjects

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of investigation and therefore logically the results of each one should not be used to negate the results of the other.

The first revolution in the Kuhnian sense (Kuhn, 1962, 1970) was produced by the classical school. Francois Quesnay published his *Tableau Economique* in 1758 and a new science was born: *Economie politique* - political Economy or Economics as it was later called. The previous mercantilist doctrine based on the paternalistic concept of government, society and economy was dying. A new outlook about the economic world was emerging. The concepts of a circular flow of income and of self-regulating mechanism in an economy of free markets - all advanced by Quesnay and his disciples-were revolutionary for that time. Adam Smith corrected some of the errors of the French school and provided a more solid foundation for the new science. A number of prominent economists of the first half of the 19th century have diligently worked to build up and consolidate the classical doctrine.

The first revolution in classical economics can be characterized by a few major points : (1) Rejection of the mercantilist concept of government - controlled economy and society as being unproductive and socially harmful ; (2) advancement of new ideas of a free society and economy inspired by the ideal of built-in self-regulating mechanisms as observed in nature; (3) a strong belief in the existence of natural laws in economic life ; (4) the behavior of economic units in such a system was presumed to follow normal patterns converging toward a stable equilibrium position ; (5) the mode of reasoning is forward-looking, *ex ante*, i. e. constructing a cause - and - effect type of analysis and policies. In one sentence, the thinking of the classics was confined within the framework of an ideal system of stable equilibrium conditions.

Especially during the 1840s through the 1860s there was much criticism of the classical doctrine. Nevertheless in the 1870s a rebirth of the classical heritage took place in a more refined form. At about the same time and independently Carl Menger in Vienna, Stanley Jevons in London, and Leon Walras in Lausanne discovered the principle of marginal utility, the key to solving the old paradox of value, at least for the classical model. Alfred Marshall shortly thereafter followed the same road. A strongly developed Italian school in public finance enriched the classical heritage.

In addition to the principle of marginal utility, the most striking element was the formulation of the law of general equilibrium by Walras, which temporarily closed the first revolution . Schumpeter considered Walras greatest of all eco-

nomists for this achievement which he saw as a «Magna Charta of exact economics». (Schumpeter, 1954, p. 968).

The consequences of World War I and the rising of the Keynesian doctrine as an aftermath of the Great Depression pushed aside the classical approach and mode of reasoning. In the late 1940s and 1950s works by Neumann and Morgenstern (1954), Samuelson (1947), Arrow (1954) and Debreu (1954/1959) and others have consolidated a formalist (purely mathematical) school in economics. In recent years a revival of the 1950s formalist technique of analysis emerged through the «rational - expectations» theory (Lucas and Sargent, 1981).

With the formalist movement, the Walrasian law of general equilibrium was revived but more in its form than its real content, and definitely not in the same spirit as the original version. Walras was not a nominalist (formalist) but rather an integrationalist (realist) thinker.

The second revolution was crystallized in what is known as Modern Economics. It sprang as a result of repeated criticism based on direct observation that the classical laws, under the prevailing conditions of the time, did not exist or in any case did not function as regularly or beneficially as the natural laws discovered in the physical universe. It was a new, critical outlook of the economic world and thus a new method of approach gradually evolved, based on a model of thinking in terms of deviations from the classical one, or simply of disequilibrium.

The new direction of the second revolution can be characterized in the following way : (1) rejection, in part or totally, of the classical ideal of a free economy and society as being simply impossible or undesirable ; (2) rejection of the classical concept of natural laws in economic life ; (3) advancement of new ideas, that either we must accept active government intervention if we want to live in a pluralistic type of society, or we must start with a brand new egalitarian, socialist society ; (4) the behavior of economic units does not normal, regular patterns converging toward equilibrium because of irregular expectations due to uncertainty in the future ; (5) the mode of reasoning is anti - classic, *ex post*, i. e., an inverted type of analysis starting with end - effects (inflation, unemployment) and looking backwards in order to construct a suitable theory ; in practice it is the application of effect - counter - effect type of policies. This is the image of a system in disequilibrium supposedly convertible by government action into a man-made, managed, relatively stable regime.

Malthus probably should be credited as being the first who ignited the spark

which led to the second revolution. Indeed he was the one who questioned the validity of Say's law of the markets in equilibrium by opposing it with his observed phenomenon of the glut (disequilibrium). (Say, 1820, 1821) In the same stream against the classical doctrine we should include the beginnings of social economics (Simonde de Sismondi, 1819), the French school of socialism (St. Simon, Charles Fourier, P.J. Proudhon and others) ; the German old and new historical schools and later the American school of institutionalism. Karl Marx the revolutionary occupies a special place because he was the master who brought the method of thinking in disequilibrium terms to its absolute limit of total disequilibrium.

It was, however, not Marx but rather John Maynard Keynes whose works and especially his *General Theory of Employment, Interest and Money* (1936) temporarily closed the second revolution in economic and monetary thinking (Klein, 1954). A more careful analysis of Keynes's contribution discloses not only elements of thinking in disequilibrium terms already observed by Malthus and even mercantillist writers up to Marx, Freud and American institutionalism, but also seeds from the revolution in physical sciences with the new concepts of relativity (Einstein) and uncertainty (Heisenberg). Keynesian Economics properly interpreted represents the Economics of Relativity and Uncertainty exactly as Walrasian Economics portrays the Economics of Certainty.

The economic science in the 1980s evidently appears as a divided house. More and more evidence is mounting that the prevailing Modern Economics of Disequilibrium, in the West under the aegis of Keynes and in the East of Marx, simply does not work effectively to solve the many problems of our time. This means that Modern Economics in some sense must harbor a fundamental deficiency in its method of approach and mode of reasoning.

In order to clarify the issue, it must be stressed that classical methodology was neither perfect nor complete. A major weakness was not studying problems of disequilibrium with the same diligence used in the analysis of stable equilibrium conditions. Their reasoning was based upon an abstract model of idealized conditions.

The classics never systematically investigated the given economic and financial realities of their time. Thus they failed to discover just how great was gap between the crude realities of life in those days and their assumed idealized model. In other words, they missed the opportunity to perceive the necessity of undertaking adequate structural reforms in order to bring the existing hybrid institutions and business practices inherited from the mercantilist era into harmony with stable equi-

librium conditions implied, nay required, by their system of thinking. In one sentence, they failed to recognize the significance of «applied science» in the economic field, a much neglected branch of study.

Modern economicists in this century, including many contemporaries, have succeeded in developing quite extensively (even though by far not complete in terms of system analysis) the foundation of modern economics of disequilibrium. Thus modern methodology has filled a large part of the gap left by classics. But alas, they too succumbed to the same methodological deficiency, that is, of not identifying the proper boundaries of their own model of thinking as distinguished from the classical one. Consequently, the moderns missed a chance to perceive the crux of the matter: the results of modern economics of disequilibrium were actually not contradictory but rather complementary to classical (old and modern) economics of stable equilibrium. In practice, however, the modern economics of disequilibrium has been erroneously interpreted as a negation or a better substitute for classical economics, and now in the 1980s we are in a sort of conceptual deadlock characterized by a divided house.

The major task ahead toward the end of this century is to elaborate and apply rigorously and systematically a new methodology capable of intergrating and unifying the divided house in economics which now blocks further progress, both in theory and practice.

I. SOCIAL ECONOMICS TOO IN SEARCH FOR A BETTER METHODOLOGY

We have just viewed a description of the grim situation in the mainstream economics. How do we stand in the field of social economics? Is its methodology better developed? Can the methodology of mainstream and social economics ever be united, not in the sense of being mixed in the form of a compromise but rather of being integrated into a larger, more comprehensive methodology so that both can further progress in harmony? Do we know for one methodology if valid when compared with the other? These are the kinds of questions that I think we should investigate for the benefit of all concerned.

It is interesting to note that Social Economics went through an evolution similar to that of mainstream economics. It started as a critical reaction to the classical doctrine and the main springboard was the «Social Question», that is, the observation of poverty in a growing capitalist economy. The issue raised was the

existence of social inequities in the distribution of national income and wealth under the rule of a free enterprise system as embedded in modern, laissez - faire capitalism. With this criticism, the social harmony preached by the classical economists in general was put to a test.

Jean - Charles - Leonard Simonde de Sismondi seems to have been the first prominent Swiss economist to raise the social question to the rank of a major problem in economics. In the Preface to the second edition of his *Nouveaux Principes d' Economie Politique* (1826) (New Principles of Political Economy), he stressed that «the increase of wealth is not the end of Political Economy, but its instrument in procuring the happiness of all» (Sismondi, 1966, p. 115). For him the problems we are faced with in social sciences are different from those in natural sciences since in the study of human societies the questions are addressed not only to reason but also to heart. In this respect, his message carries a great moral responsibility for any social economist :

«The observer is called upon to take cognizance of cruel sufferings, of unjust sufferings, which proceed from man, and by which man is the victim. We cannot consider them coldly, and pass them over without seeking some remedy.» (Ibid, p. 122)

There is here a voice definitely different from the classics who thought that the foundation of economics, as of all other sciences, was on reason, the only reliable instrument we have to construct principles or to discover natural laws. We could redirect the above criticism by pointing out that the unjust sufferings under capitalism were proceeding not so much from man but more from inadequate institutions to protect man from malfunction of or malpractices within, the system. The remedy then would conform to reason. But this kind of remedy was missing in the classical doctrine. Thus Sismondi had his point in criticizing the capitalist system and the doctrine supporting it.

Sismondi's social philosophy is not far from that shared by many social economists of today. He wrote :

«I raised doubts on principles which were looked upon as fixed ; I shook the foundations of a science, which, by its simplicity, by the clear and methodical deduction of its laws appeared to be one of the noblest creations of human intellect. I attacked orthodoxy, as dangerous an enterprise in philosophy as in religion (Ibid, p. 113)

I invoked more than once the interference of social power to regulate the progress of wealth, instead of reducing political Economy to that most simple

and apparently most liberal maxim, to let alone (de laisser faire et laisser passer)» (Ibid, p. 114).

All classical economists were concerned with the question of how to produce as much as possible since they thought that was the real issue which would free man from the bondage of scarcity and implicitness of poverty. But the reality of a significant number of people living in the same regime, spoke a language different than that of the classics. On the basis of his observations, Sismondi raised the question: Increase of wealth is all right but for whom? Is the wealth an «attribute of man or of things»? His answer was unequivocal : since «economy, according to the proper sense of the word, is the regulation of the house and political economy is the regulation of the house applied to the city» then «all proceeds from man, all must relate to man, and to man united by a common tie.» (Ibid, p. 124).

Sismondi's social philosophy appears again different from the classics in the perception of wealth. For classics the concept of wealth was in the abstract, that is, accumulation of material things in the analytical sense of the term. It was assumed that these things would be distributed to satisfy human needs according to the law of supply and demand. Sismondi has a different perception about wealth. For him «wealth is not an essence, but an attribute, and its nature changes with the persons and the things to which it is attributed.» (Ibid, pp. 125 - 26). And with a strong hint to the classics, he wrote :

«In fact, we lose ourselves whenever we attempt to consider wealth abstractedly. Wealth is a modification of the state of man : it is only by referring it to man that we can form a clear idea of it... .

A truly rich nation would be the one in which this abundance would produce the most material enjoyment, to the poor on one side, to the rich on the other». (Ibid, p. 127)

Reading these observations, there is no doubt that the classics were concerned mostly with how to produce wealth whereas Sismondi's goal is an equitable distribution of wealth to satisfy both the poor and the rich. His ambition was «to discover what path must be followed in order that the material wealth which labour creates may procure and maintain the greatest well - being for all.» (Ibid, p. 13). One could not but agree with the ultimate goal of an equitable distribution of income and wealth, but first problem is to consider the fact that in addition to labor have other factors (land, capital, entrepreneurship and to a certain extent government) which have to be included in the same equitable procedure. Not less important, from the practical point of view, is the second problem to discover under what concrete

ways (the institutional and legal framework) can we take that natural path leading to the «greatest well - being for all.»

Sismondi was very good as a critic of the capitalist system of his time and of the classical doctrine which inadvertently, more by default than by explicit commitment, supported that regime. And it was a real drama that nobody at that time or thereafter separated the classical doctrine from the existing capitalist system when the latter actually killed the significance of the former. Be that as it may, Sismondi did not provide any practical means of how to establish a better regime by converting the social evils of his time into social benefits. His opinion that the riches of a country should contribute to the happiness of all is well taken but his is just an abstract moral desire. That these riches must be distributed among the population in certain proportions is correct. In fact that is the case in a system of general stable equilibrium conditions. But if we do not identify those equilibrium conditions and if we do not show practically how those conditions can be implanted in the system, then we are merely discussing the issue superficially, as Sismondi and others did at that time and thereafter. General statements may have ethical content, but in real life if they are not supported by an adequate institutional and legal framework, they are not effective, they do not represent a workable solution to the social question.

At the beginning of the 19th century there was a great debate about «industrialisation» and the «système industriel» in Europe and in this context we should view the contribution of Sismondi and the beginning of social economics. The old classics interpreted the new industrial society as a natural thing that would develop and bring positive fruits. Sismondi, on the basis of his observations when he was in England, the most industrialized country at that time, came to the conclusion that in addition to positive aspects there were also negative ones like the emergence of recurring crises, a significant number of poor people he called «proletariat» (before Marx), the ruin of small farms and other similar social disturbances. Even though he did not have a concrete solution to these problems, nevertheless he sounded the alarm that governments should be concerned with these issues.

Soon in the same critical anti-classics spirit led by Sismondi, a whole socialist school emerged in France with purpose of completely reorganizing the rising new industrial society on a socialist basis following the concept of social justice of equality but preserving human freedoms. Saint Simon, Charles Fourier, Louis Blanc and Pierre J. Proudhon, among others, are representative of this movement. This may be considered the first version of a revolution in social economic thinking.

The failure of the «national workshops» experiment during the 1848 Revolution in France discredited to a certain extent the socialist solution to the social question. Perhaps this was the cause that motivated Proudhon to think about the social question in terms of economic conditions where products and services are sold at «just prices» with no excess profits. He correctly observed that «Sale at a just price is unknown : it has never been put into practice, and for the good reason that it has not been understood.» (Proudhon, 1869, p. 229). Selling at just prices meant nothing but selling at equilibrium prices but of course this required a system of general equilibrium. Proudhon did not have such a concept as developed later by Walras, but he correctly diagnosed that only such a system of just prices «can secure the prosperity and security of mankind». (Proudhon, *ibid*).

Finally came Karl Marx with his revolutionary thesis wherein the capitalist regime was viewed as a completely system which needed to be overthrown by subversive means or open revolution and replaced by a brand new socialist regime under the dictatorship of the proletariat. In a way the Marxian thesis spoiled further advancement of the French school of liberal socialism.

As a more or less conservative reaction to both the classical school and the French socialist movement including Marx, a second version of a revolution in social economic thinking took place in Germany. First there was the old historical school led by Hildebrand, Knies and Roscher together with the Austrian Friedrich List who advanced an organicist conception of a national economy (J. Krabbe, 1986). This is the historical approach whereby a national economy is conceived as an empirical entity developed over time and according to diverse local conditions within a given country. The economic problems are assessed in terms of the prevailing historical conditions. In turn the classics were concerned to develop a conceptual body of knowledge independent of the historical conditions at a given time but capable of explaining those conditions. These are two different approaches which are not contradictory but rather complementary if properly used and interpreted.

Succeeding the old school, a new historical and ethical school developed in Germany led by Gustav Schmoller and a group around him called Kathedersozialisten («socialists of the chair,» because many were teachers holding a chair in a university). A conservative perception of the social question dominated the thinking of the younger German ethical school. It was conservative because the correction of social inequities was to come by peaceful means (government social policies) with the recognition of the private ownership of the means of production, and repudiation of a Marxist - type revolution. In other words, the German

ethical school attached itself more to the concept of social justice of equity rather than of equality.

Later the school of social economics, in Austria initiated by Friedrich von Wieser, in Germany by Heinrich Pesch, and in Italy by Luigi Cossa, was actually a continuation and refinement of the German ethical school. The can be said in general about American Institutionalism led by Wesley Mitchell, John R. Commons, and Thorstein Veblen, among others.

The major points of the second version of a revolution in social economic thinking can be concentrated in two parts. The first one was the perception that the existence of the social question was an inevitable by-product of a modern capitalistic economy. The second point was the conclusion that the only solution to this problem was the application of adequate social policies through democratic government intervention, but the exact meaning of adequate was never clarified. Often the desire for a «more equal distribution of national income and wealth» is mentioned but here again we are faced with the difficulty of identifying how much more equal» is beneficial or possible in a modern society.

Be that as it may, since the 1930s and especially after World War II under the various social programs included in the concept of the «Welfare State» and induced by the Keynesian policies of full employment, we are following, at least in the West, the realization of a more equal distribution of national income. Yet, after almost two generations, the patterns of the national distribution of income in the aggregate did not change too much. Thus the social question lingers as an invisible social cancer which is eroding the foundations of Western civilization. By 1986 it is clear that government intervention per se, as used in traditional monetary and fiscal policies of full employment, is not sufficient or, more precisely, is not able to solve effectively and efficiently the multiple problems of a modern society and economy. In this respect a social crisis exists which, however, is not limited to the Western democracies but also encompasses the East and the Third World.

Can social economics help to solve the social question and with it the social crisis of our time? The answer unfortunately is inconclusive for time being. Like that of mainstream economics, the house of social economics is also divided. First, there is a continuous intellectual war among social economists themselves ; a more radical group still believes that only a Marxist revolution is the salvation, whereas a more conservative group clings to the preservation of the status quo of modern capitalism but guided by adequate social policies. Second, there is a perennial argument between social economists who are in fa-

vor of normative economics and the mainstream economists who defend positive economics.

The paramount problem is how to bring peace in the social - economics camp proper and then between social economics and mainstream economics. I believe that with the help of an improved Walrasian heritage and a new research programme of a simultaneous equilibrium vs. disequilibrium approach, this complicated issue can be clarified to the point where reason and good will may solve it.

II. LEON WALRAS, THE PURE SCIENTIST

1. The Law of General Equilibrium and the Missing Parts

Walras started the observation of the phenomenon of exchange conceived as a natural thing similar to other natural phenomena. He tried to solve this problem by adopting and improving the concept of «rareté», inherited from his father who also was an economist in his own standing. Rareté means that something has value when it is useful and it is limited in quantity. Walras forged the concept of rareté into a new principle of marginal utility which he discovered at about the same time (in the 1870s) when Carl Menger in Vienna and Stanley Jevons in London followed by Alfred Marshall in Cambridge, England, independently came to the same result.

The principle of marginal utility helped to solve the old paradox of value and indeed revolutionized the science of economics by coming close to the status of other natural sciences. Unfortunately, it was not pointed out from the beginning that the principle of marginal utility can resolve the paradox of value but only in one system, where utility is measured in terms of Numeraire - currency (or 100 % commodity money) which is consistent with the Walrasian model but not with a myriad of other possible systems where also anti - Numeraire forms of currency (paper - money and monetized bankcredit or credit - money) may be in circulation together with or replacing Numeraire. This is the reason why the principle of marginal utility later was discredited and partially abandoned. (J. R. Hicks, 1934)

Walras's ambition was to develop the economic science on the same foundation as the natural sciences, taking as a benchmark Newton. «It is already perfectly clear,» he wrote, «that economics, like astronomy and mechanics is both

an empirical and a rational science.» (L. Walras, 1954, p. 47). For this special purpose he developed the Law of General Equilibrium in stages, starting with rareté and value in exchange for two or more commodities and then adding the mechanism of production, the process of capital formation and the use of money in the form of Numeraire, all under the assumption of a «hypothetical regime of perfectly free competition.» (Walras, *ibid*, p. 40). The study of the determination of prices in such a regime of pure competition he called «Pure Economics.»

The final result was in Walras' s words :

«Under certain conditions and within certain limits the mechanism of free competition is a self-driven and self-regulating mechanism not only for transforming services into products but also for turning savings into capital goods proper. And so, in the case of capital formation and credit, as in the case of exchange and production, the conclusions drawn from pure economics become the point of departure for applied economics. In one case as in the other, these conclusions clearly point to the task which Social economics has to perform.» (Walras, *ibid*, p. 306)

The principle of free completion in the Walrasian model governs the universe of economic activity with «maximum effective utility» and «uniformity of price»,» a double condition similar to the way in which the physical universe is «automatically governed by the double condition of gravitation which acts in direct proportion to the masses and in inverse proportion to the square of the distances». (Walras, *ibid*, p. 305)

The Walrasian law of general equilibrium is very simple and can be formulated in this way : Given (1) a system of open markets ruled by free competition where monopoly forces are assumed to be reduced to zero at the limit (pure competition), and (2) that all¹ prices and implicitly incomes are expressed only in terms of Numeraire, then «the condition of general equilibrium is fulfilled *ipso facto*. Otherwise arbitrage transactions are required for the attainment of general equilibrium.» (Walras, *ibid*, p. 173)

This is the great contribution of Walras which Schumpeter considered to be the «Magna Charta of economic theory.» (J. Schumpeter, 1955, p. 242). In the spirit of Schumpeter' s assessment, it is correct to say that what Newton achieved in physics and mechanics was similar to what Walras performed in economics. Indeed both worked and reasoned, each in his own field, within the boundaries of a model of stable equilibrium at its limit, that is 100 % consistent and leaving out

possible disequilibrium elements as exceptions to the rule. With this in mind we should read in Walras :

«Very few of us are capable of reading Newton's *Philosophiæ Naturalis Principia Mathematica* or Laplace's *Mécanique Celeste*; and yet, on the word of competent scientists, we all accept the current description of the universe of astronomical phenomena on the principle of universal gravitation. Why should the description of the universe of economic phenomena based on the principle of free competition not be accepted in the same way? There is no reason why the proof of the system, once established, may not be taken for granted, nor why the assertions involved may not be used in the study of questions of applied or practical economics.» (Walras, *ibid*, p. 428).

A hundred years later, in the 1980s, it is quite proper to ask why the above description cannot be taken for granted without further qualification. First Walras, like Newton, took for analysis an ideal, limiting model 100% consistent, where mathematics could be applied on a large scale and the solution to any problem was determinate but eliminating all other possible systems where the solution to a problem may be less determinate or not determinate at all. Thus, even though the fundamental conclusions reached by Walras theoretically are true in Model M_1 (on my Talbe in the Appendix), nonetheless they may be questionable and even not true in terms of validity when applied to explain realities distant from this model. He did not have the concept of the orientation Table, comprising all possible systems, in order to be able to see this problem. And even this is not whole story.

The Walrasian law of general equilibrium is not complete in the full sense of the prefix «general,» as shown in more detail elsewhere. (Rugina, 1982). Specifically Walras was not aware that a given force like competition or gravitation cannot act in such a way as to produce and maintain a position of stable equilibrium in a vacuum unless a suitable institutional and legal framework was provided or assumed to exist. Newton did not need to worry about this problem since, in the physical universe in which we live, a stable framework based on a constant axis (natural parameter) of the earth and a constant position of the sun (which helps gravitation to function normally both ways) was embedded in the system from the beginning. But in economic life the natural parameter of the Numeraire (a constant axis in the system) is not given and thus in economics we have an additional problem which in natural sciences does not exist.

Walras did not see the third indispensable assumption for the validity of the law of general equilibrium, that is, the requirement : (3) Given an adequate, stable

institutional and legal framework consistent with the natural parameter of the Numeraire and the force of competition, then, as Walras himself concluded, «the condition of general equilibrium is fulfilled *ipso facto*». The problem of a stable institutional and legal framework is a very complex issue. It implies a comprehensive investigation to identify analytically that unique structure of institutions, business practices and laws in a national economy which are consistent with Numeraire and pure competition as distinguished from those parts which partially or totally are inconsistent and thus unstable.

Another important element missing from the law of general equilibrium is a theory of the normal (equilibrium) profit necessary to compensate the services of the entrepreneur which, in addition to the contribution of land, labor, capital and government, makes possible the production and exchange of commodities. Even though the function of entrepreneurship is well described in the *E l e m e n t s* (pp. 222, 227) nevertheless Walras in his system of equations conducive to general equilibrium did not include the entrepreneurial function on the rationale that «in a state of equilibrium in production, entrepreneurs make neither profit nor less.» (Walras *ibid*, p. 225), With all the explanation given in the text, I consider this to be an antinomy in the Walrasian system of thought. Indeed if we accept the proposition that profit is zero in a state of equilibrium, then an economic firm cannot exist under such conditions and implicitly production and exchange are not possible either.

This antinomy, however, can be easily disposed of by introducing in the Walrasian system the function of entrepreneurship, receiving a normal (equilibrium) profit based on the opportunity cost in the same manner as the reimbursement to all other factors. The above text in Walras, therefore, should be changed to read : «In a state of equilibrium in production, entrepreneurs make only a normal profit.» By this amendment the Walrasian law of general equilibrium is not weakened but rather strengthened, both in theory and application.

2. The Walrasian Concept of Science Unnecessarily Restricted

Walras shared a rather restricted, one might say puritanic, concept of science limited only to pure theory, that is, the study of the ideal, perfect form of reality. Thus in his view «the pure theory of economics is a science which resembles the physicomathematical sciences in every respect.» (Walras, *ibid*, p. 71). And he repeated this many times.

In point of methodology he thought that the scientific approach must be the same in all sciences, thus hinting at the necessity of a methodological unification of both natural and social sciences. It is interesting to note that Walras used the theory of «idealtypes concepts» long before Max Weber. It would be intriguing to undertake an investigation to find out whether or not Weber was familiar with the work of Walras when he developed his theory, in view of the fact that the name of Walras was not mentioned (M. Weber, 1904).

The method of approach in ideal-type concepts is correct, in fact indispensable in theory, but to restrict science only to the study of pure theory of such ideal types is not necessary and in fact not productive, especially when the question of application is raised. It is true that Walras made a clear distinction between science, art and ethics (Walras, *ibid*, pp. 61 - 63) and originally he planned to write three books along this fundamental distinction. Book One included «Elements of pure Economics or the Theory of Social Wealth» and was published in two installments in **1874** and 1877.

Book Two was planned to deal with «Elements of Applied Economics or the Theory of Agricultural, Industrial and Commercial Production of Wealth» which corresponds to art. Book Three finally was supposed to treat the subject of «Elements of Social Economics or the Theory of Distribution of Wealth via Property and Taxation» which corresponds to ethics. The latter two books were published later, not in finished form as was the first book but as a compendium of various articles under the title : «Etudes d' Economie Politique Appliquée (Théorie de la Production de la Richesse Sociale)», 1898, and «Etudes d' Economie Sociale (Théorie de la Repartition de la Richesse Sociale),» 1896.

The distinction of the three branches of economics is also correct but a weak methodological aspect arises here. In the Walrasian classification the economic science does not appear as a consistent unity since the three branches mentioned above are conceived as separate units and each one has its own theory. In other words, there is no direct line of communication in the sense of a logical sequence among the three branches, and this is explained by the very narrow Walrasian concept of science restricted only to pure theory.

This methodological weakness, however, can be corrected easily by adopting a more comprehensive concept of science. Indeed, I think that all issues in economics as well as in other social sciences can be concentrated in five different categories of problems (exhaustive in the Kantian sense) which lead to five branches of economics, each one with its own object of investigation but interdependent and aligned in a logical sequence. They are : (1) Economic History, dealing with

the description empirical realities ; (2) Economic Theory, concerned with the construction of ideal - type concepts and theorems used in the explanation of economic realities in general ; (3) Economic Ethics, studying the ultimate goals (ends) of economic activity and setting normative rules, valid for production, exchange and distribution of national income and social wealth in accordance with the principle of social justice of equity and respecting the ideals of individual freedoms, human solidarity and social peace ; (4) Economic Policy, concerned with technical problems (art in Walras) of how to implement given goals or targets set by Economic Ethics and consistent with tested principles provided by Economic Theory ; and (5) Economic Doctrines or History of Economic Thought. This new, more comprehensive! concept of science I call «Quinta Methodica» which is a part of the research programme.

This new classification puts the contribution of Walras in a different perspective. Had he followed such a more comprehensive concept of science where ethics is included under the same roof and therefore submitted to the same rigors of scientific scrutiny, very probably we would have had a different Walras as a social reformer.

3. An Orientation Table for Economics as a Logical Extension of the Walrasian Research Programme

Schumpeter characterized the Walrasian system as «nothing but a huge research program» (Schumpeter, *ibid*, p. 1026) and made an interesting observation that deserves to be scrutinized. «It remains true», he wrote, «that both Walras himself and his followers greatly underestimated what had and has still to be done before Walras' theory can be confronted with the facts of common business experience» (Schumpeter, *ibid*, p. 1015). Here emerges the question of application of theory to explain economic realities. The key issue is to estimate the size of the gap between the perfect Walrasian model and the existing economic and financial realities. Neither Walras nor Schumpeter possessed the methodological instrument to estimate the size of gap in question. Yet Schumpeter the analyst but also the former banker, more by intuition than reasoning, sensed that the gap was big and therefore he was right that much was to be done «before Walras' theory can be confronted with the facts of common business experience».

In addition to the missing parts mentioned earlier, a methodological tool of great importance is the Orientation Table for Economics which can be conceived

as a logical extension of the Walrasian research programme. It is based on a simultaneous equilibrium vs. disequilibrium approach embedded in an axion called the Universal Hypothesis of Duality which says: The physical as well as the social and economic world are composed of stable (equilibrium) and unstable (disequilibrium) elements, forces, values, institutions. This is a self-evident truth confirmed by direct human experiences and thus needs no further proof; it can be as an axion.

The reasoning to substantiate the above axion in Walrasian terms is also simple. If pure competition and Numeraire as ideal-type concepts are acceptable in science as equilibrium elements and forces—and there is no doubt they are—then we must also treat in the same manner their counterparts on the disequilibrium side, that is the concept of pure monopoly and anti-Numeraire. The composition of the new research programme and the Orientation Table are in the Appendix.

III. LEON WALRAS, THE SOCIAL REFORMER

Walras as a social reformer was a different personality from Walras the pure scientist and yet both into a unique combination of diverse characteristics. As a scientist his great interest and ambition was to develop the economic science on the same rational foundation as the natural sciences. The law of general equilibrium, even though incomplete as shown earlier, nevertheless portrays the image of a perfectly free economy organically associated with a perfectly free democratic form of society and government. The organic link between economy, society and form of government is evident.

1. Walras as a Social Economist

In presenting Walras as a social reformer the picture changes. He omitted from the law of general equilibrium two important elements: (1) the institution of property or the means of acquisition of wealth, and (2) taxation and State, respectively government. Why did he make this omission? A plausible explanation seems to be the suggestion that Walras harbored in the back of his mind a *parti pris* solution for these two items, a solution different from that derived from the law of general equilibrium. Consequently, the «socialist hypothesis» associated with Walras the social reformer emerges and deserves to be thoroughly investigated.

In order to avoid any misunderstanding about the memory of this great scientist and in such an important and super-sensitive issue, we have to allow sufficient room for his words verbatim. In the *Elements of Pure Economics* he wrote :

«In our description of the mechanism of exchange, production and capital formation, we have not only assumed perfect freedom of competition in the markets for products, services and capital goods, but we have abstracted from two things : First, the method of appropriation of services concerning which we made no special assumptions, and second, the role of the State, its services and its needs.

It is manifest, however, that an economy cannot function without the intervention of an authority empowered to maintain order and security to render justice, to guarantee national defense, and to perform many other services besides. The State, however, is not an entrepreneur ; it does not sell its services in the market either on the principle of free competition (at a selling price equal to the cost of production), or on the principle of monopoly (in pursuit of maximum net receipts). It often sells its services at a loss and sometimes gives them away without charge. As we shall see in a later work, this is as it should be, because the services of the State are meant for collective, and not individual, consumption» (Walras, *Elements*, p. 447).

This description admirably defines the economic function of government. Especially important is the emphasis that an economy cannot function normally without the existence of the State, exactly as it cannot function properly without the cooperation of the other factors : the owners of land, labor, capital and managerial skill. From such a precise formulation it is easy to follow the next logical step, that is, to declare government, under certain conditions, the fifth factor of production with a legitimate right to receive an adequate indemnization like all other factors and based on the same unique principle of marginal utility (rareté) for the evaluation of public services. It is true that government does not sell its services in the market like an entrepreneur but in the final analysis both private and public goods and services represent utilities which satisfy human needs. In a system of stable equilibrium one additional dollar spent in the public sector must be equal or close to the marginal utility of another dollar spent in the private sector. Then the people who pay taxes would receive full social value for their contribution. If there is a significant gap between the two marginal utilities, then that means disequilibrium, inefficiency and social inequity. But Walras did not follow this line of thought which was developed later by the Italian school of public finance.

It is the complete separation between the study of exchange, production and capital formation (Pure Economics) and the study of distribution of income and social wealth with the issue of property and taxation (Social Economics and Moral Philosophy) which opens the door to understanding the existence of two Walrases.

An important question can be raised and this probably will never be fully settled since only Walras himself could answer, and that is impossible. Why did he separate pure Economics from Social Economics? Was it because he was faced with analytical difficulties by introducing the social question or ethical issues in his law of general equilibrium - not uncommon in the life of a scientist - or because he already was committed to a favorite solution to the social question (the nationalization of land) which was not compatible with pure Economics?

If the latter case is true, then the Split between pure Economics and Social Economics was the finale of a personal, subjective value judgment and not a strictly scientific necessity. Indeed, if Walras the social reformer was a socialist, then he was a socialist like no other socialist or, as Schumpeter put it, a «semisocialist» (Schumpeter, *ibid*, p. 888).

To be sure, we shall find repeatedly in his book on Social Economics the same leit motif of his own brand of socialism based on the nationalization of land, and from time to time also the value judgment that Socialism (but not Communism in the sense of Marx) in general was better than Liberalism (equated by him with «absolute individualism»). At the same time Walras never questioned the principle of human freedoms and he never recommended a collectivistic type of society and economy, known today as a government centrally - planned and controlled economy and society.

It is true that the idea of nationalization of land came from his father, but instead of Walras' brilliant mind dissecting it analytically to find out whether it was consistent or not with the law of general equilibrium, he converted it into a basic assumption for Social Economics. This was interpreted at the time as a personal value judgment outside of science and it has irked many contemporaries, not the least admirers of Walras the pure scientist. For instance, Schumpeter, who praised Walras' contribution in pure economics so much, was little enthused, if not directly critical of Walras, work in social economics. He wrote :

«Unfortunately Walras himself attached as much importance to his questionable philosophies about social justice, his landnationalization scheme, his projects for monetary management, and other things that have nothing to do with his superb achievement in pure theory» (Schumpeter, *ibid*, p. 827).

Marcel Boson, in a more recent study, attempts to restore, at least partially, the reputation of Walras as a social reformer. But even Boson, an admirer of Walras, cannot hide the fact that «Leon Walras never changed his appreciation of sentimental and empirical socialism. He fully recognized that the basis for socialism laid in the imperfections of society, but at the same time he did not abstain from criticizing with vigor and rejecting without compromise its method and conclusions» (Boson, Marcel, 1963, p. 25).

2. The Walrasian Version of the Social Question»

Walras was 26 years old when he published his first book entitled *L' Economie Politique et la Justice*, 1860 (Political Economy and Justice) with an Introduction to the study of the Social Question. His message in this book is not a call for violent revolution nor for social revenge but rather for human solidarity and rational social reforms.

In the Introduction he begins by stressing the pitiful conditions of the French workers in Paris at that time, according to information from the «Statistique de l' Industrie a Paris en 1847.» Nationwide the situation was not much better than in Paris. This information was used first by professor Baudrillart of the College de France in a lecture about the principles of political economy and ethics with regard to the problem of poverty. After he quoted the statistics, Baudrillart remarked that no further comments could match the eloquence of the given figures.

Walras appreciated the sensibility of the professor as a man of good heart and he has this to say :

«There is no medical doctor or surgeon who faced with sickness or injuries will start to weep or moan, and if there be such, then they are not the best. The same is true for an economist faced with social evils : he must learn to remain calm, to suppress his emotions in favor of the success of his studies. Finally, as soon as he has crossed the evil in every sense, he must be ready to leave the field of reality in order to elevate himself to the domain of cold abstraction which is also that of science» (Walras, 1860, p. ii).

Baudrillart thought that the main reason for poverty among the working class was the lack of elementary education and professional training. While Walras again agrees with him, he points out the existence of a vicious circle : the scant wages of the poor workers does not afford them the possibility to acquire necessary instruction; consequently they are condemned to poverty from father to son and

from mother to daughter. The sensibility of Walras could not remain indifferent to this state of affairs. He adamantly posed a number of social questions aligned as follows :

«Let us go to the facts. Does there exist in our society another kind of poverty which does not result logically from laziness, stupidity or the reverse of good luck? Does there exist any other sort of wealth than that legitimately acquired by work, talent or success and proportional to these causes?

Without disorder and fully protecting the natural and sacred rights of property and family, could we not approach this issue of poverty with more of the spirit of social justice expressed poetically by this admirable passage from Plato, the principle of true equality, the formula of complete rational democracy :Do not impede the sons of the slaves to elevate themselves to the rank of a king; do not impede the sons of a king to fall to the rank of slaves» (Walras, 1860, p. iii).

There is a message here which is valid not only for 1860 but actually for our time as well. The kind of poverty Walras is talking about above can be called «involuntary poverty» produced by the social system and not by individual deficiency. It is also interesting to note that in the spirit of social justice, Walras makes a distinction between (a) property legitimately acquired by work, talent or success proportional to these causes, and (b) illegitimate property acquired by deception, fraud, chance or corruption, which befits a system in disequilibrium. The quotation from Plato seems to confirm also the principle of true social equity but Walras is expressing here the first part of his double concept of social justice to which we shall return.

On the other hand, he criticized Rousseau and the theory of social contract and the return to a state of nature. For Walras a state of nature never existed and so the social contract. Society for him did not have a «constitutional but a natural origin» (Walras, *ibid*, p. iv) If society is of a natural origin then, he reasoned, this must be true also for its development. Certainly Walras shared the must be true also for its development. Certainly Walras shared the 19th century evolutionary view of a natural development of human societies, always struggling toward social progress. It is interesting to read in the following passage how Frenchman like Walras expressed the Victorian philosophy of optimism and belief in continuous progress, even when traveling a bumpy road :

«Civilization performs in a logical manner even when not exactly following the precise laws of Hegelian logic. The progress, in one way or another, is organised. As imperfect as our social condition may appear, we must accept it without revolt because it is necessary; without regret because it comprises the indestructible principle of its own amelioration.» (Walras, 1860, p. v)

The liberal spirit of the time is evident here. With all the social problems of that era, he remained an idealist and an optimist that in the final analysis the truth, which is a part of social progress, would win. Human societies are going to vanish just because there is some evil in this world. But the moral obligation of each one is to contribute to the improvement of the given conditions. And as an acme of this kind of reasoning, he continues :

«Here is what a wise spirit can learn from an attentive study of our social organization. This organization is not at all to be destroyed, nor to be remodeled entirely : it is simply to be made more perfect following the indications of history, of political economy, of philosophy, of all sciences.» (Walras, *ibid*)

There is no trace of the spirit of a revolutionary à la Marx or Proudhon or even of a common socialist. Instead it is the best possible description of a social scientist attitude toward social reform conceived and achieved by rational and peaceful means and according to what really is applied science.

With this kind of documentation and frame of mind, the voice of Walras rises to warn contemporaries :

«There is a question which is not the Far East question, nor the Roman (the Church of Rome) question, nor the question of the British Alliance ; a question much more important than all these and which a great deal more touches us : It is to know the social question». (Walras, *ibid*, p. vi).

Walras as a scientist was decidedly against simple «empiricism» as a sole basis for science or policy matters. He strongly defended the view that without theory there is no science. In this spirit he considered that an effective solution to the social question requires first the formation of a social science capable of providing a clear - cut theoretical explanation of the issue. Here Walras was on solid ground by hinting at the necessity of adequate theory in solving practical problems in the domain of applied science. In his words :

«It is the question to establish with the help of a rigorous method the science and the art which have as an objective the ensemble of the free activity of man

living in society ; this is what the problem is and one has to admit that it would be difficult to express it in terms which are at the same time general and more precise.» (Walras, *ibid*, p. viii)

3. The Seeds for a new Doctrine of Human Solidarity

Walras as a scientist and man of action was a great defender of human freedoms and social justice. «If I am asked,» he said, «to name that superior fact. . . from which society can draw its explanation . . . I answer it : Liberty!» (Walras, *ibid.*, p. x). For him liberty was the source of both- Society and Morality.

The idea of human solidarity was another principal element shared by Walras the social economist. The relationship between «absolute communism» and «absolute individualism» was described in this way :

«Les us say at first that the fact of society in this consists phenomenon that the individual destinies of all men are not independent but rather interdependent of each other. This does not mean at all what absolute communism maintains, namely that no person has a destiny other than that in the form of an organ belonging to a whole reality called society. No! Human destinies are not that completely interdependent. But it is also certain that they are not completely independent so that each one is like an isolated monad, as absolute individualism enunciates.» (Walras, *ibid*, p. ix)

He saw clearly that the position of man under both absolute communism and absolute individualism was inhumane. Unfortunately he diagnosed that the solution to this dilemma was a compromise or reconciliation between the two opposing social doctrines. This compromise idea, in my judgment, was fatal for the success of Walras' work as a social reformer. It closed the door for him to perceive that the ultimate solution to the social question was not in a compromise of any sort but rather in a strict application of necessary reforms derived from the conditions of a system in general stable equilibrium. Such reforms should prepare the terrain to make possible a normal functioning not only of economic efficiency but also simultaneously of social justice of equity ingrained in both the production and the exchange process. In that case the problem of the distribution of income would not be treated separately. But he could not see this ultimate solution which, by the way, is consistent with his Pure Economics. This was partly because he dogmatically divided the science of economics into there independent parts. In addition he carried all his life in the back of his mind the pet solution to

the social question inherited from his father called the «nationalization of land» and which was not in conflict with the idea of a compromise.

In this issue Walras seems to have been influenced also by the French philosopher Vacherot who at that time maintained that «politics oscillates between individualism and communism . . . taking turns by making either too large or too narrow one of the two principles whose equilibrium makes the law of any well organized society.» (Walras, *ibid*, p. ix) In view of the compromise suggested by Vacherot, Walras with his keen analytical mind tried to clarify the issue further :

«It is precisely the most direct object of the social science to say as exactly as possible in what matters human destinies are independent and in what they are interdependent to each other. It is always the idea of a certain solidarity of human destinies, determinate and definable, which constitutes the idea of society» Walras, *ibid*, p. ix, x).

In this comment, and what he said before and after, Walras had the ingredients to formulate a new doctrine of human or social solidarity in a civilized society and thus refute both absolute communism and absolute individualism, without any need for a compromise,.

Walras cleared another age-old argument between the rule of equality versus inequality in human societies. He formulated the rule of equality in this way : If every man is a free person, then all men in their capacity as free persons are equal in society», which of course is true but only in a free, just and stable society. He also defined inequality in no less precise terms : «Men are unequal from other points of view : development of their faculties ; from the point of view of merit and demerit» (Walras, *ibid*, p. xi). But we have to add again the qualification of a free, just and stable society since this is normal, natural inequality based on equity and which does not pose any social problems.

Once the sphere of equality and inequality in a free society of the above type has been determined, then the next step is to formulate what Walras called «the superior law of social solidarity.» If he would have stopped here everything would have been right and the new doctrine of social or human solidarity could have become the focus of his own system of social thought, independent of the other two doctrines. Unfortunately, in his own words, the superior law of social solidarity was to be formulated «in such terms that it contains in its expression the conciliatory principle between communism and individualism» (Walras, *ibid*).

The introduction of the conciliatory principle marks the emergence of Walras the social reformer as a man of action with a personal *parti-pris*. From here on the analysis will be a mixture of parts of pure science and other parts of a normative nature devoted to serving the conciliatory goal. And it is most interesting to follow step by step how ingeniously Walras used his extraordinary power or reasoning to cope with this mixed, previously committed position. There are places where the voice of the pure scientist is fully preserved, but there are other places, especially in conclusions, where the voice of the engaged scientist comes to the surface and it is not easy to discern the line between the two.

Walras also makes a clear distinction between the true, the just and the useful as belonging to science, ethics and art. The application appears correct logically when he ascertains that the theory on the value of exchange must be exact (true) ; the social conditions of property or the distribution of social wealth must be equitable (just) and production of goods and services must be abundant (useful). The methodological deficiency lies in the fact that there is no adequate correlation among the three concepts.

He failed to see that under his own model of general stable equilibrium (in pure economics) the true, the just and the useful were fulfilled simultaneously. It is only in a system in disequilibrium (as under modern capitalism or socialism) that a conflict arises between the «useful» and the «just» and implicitly also the «true». But Walras assumes that the conflict is always there even though this is scientifically not quite true. On this debatable assumption he supports his recommendation of nationalization of land as a possible solution to reconcile the conflict between the useful and the just.

4. A Double Concept of Social Justice

Under the title «General Theory of Society» Walras reprinted in his «*Études d' Economie Sociale*» (1896), among other studies, also six public lectures he had delivered in Paris between 1867-68. By 1867, in addition to his social and philosophical background, he had also acquired some experience from the real world by serving for three years as administrator in the French cooperative movement. But the strength of his reasoning did not come from that direction. His mind was not inclined to be labor in simple, empiricist exercises with extensive use of statistics. Instead, he was a man of pure reason, in the Kantian sense, and belonged more to that class of rational thinkers of the 18th than 19th century. He would observe realities until «in a flight of thought,» as Keynes said,

he would pick up the essential and convert it immediately in «ideal concepts». With these in turn he would build up rational systems of analysis in the form of large research programs.

This is what we find in the volume on Social Economics - a large research program on the «Social Question» and related issues. Walras had already made public practical recommendation for the nationalization of land that his father authored had never published. In order to support this recommendation with a massive theoretical foundation, he links his proposal with a vast synthesis between Socialism and Liberalism, between Utilitarianism and Moralism, between Materialism and Idealism, and finally between Communism and Individualism.

We cannot go into detail here regarding this synthesis where arguments as old as human cultures and civilization are reduced to a few concepts and used at the highest level of abstraction.

What we are interested in is to disentangle the Walrasian *sui generis* proposal of nationalization of land without losing the connection to his all comprehensive research program. The proposal has to be viewed as a practical conclusion derived from a new social order based on a theory that Walras called «synthetic socialism», or simply «synthetism» (Walras, 1896, p. 239), which in turn was conceived to provide a reconciliation of the important arguments just mentioned in the previous paragraph.

The new social order envisioned by Walras theoretically represents a synthesis between the rights and obligations of the individual on the one side and of the State on the other with respect to economic and social matters. Practically it is a program composed of three basic elements : (1) The Nationalization of Land ; (2) The Abolition of Taxation ; and (3) Laissez - faire for the rest of the economy, with the understanding that the superior rule of competition did not mean a do - nothing form of government but rather a suitable milieu established and enforced by the State where fair competition really works and obstructing elements like monopoly in diverse forms and other malpractices are eliminated.

For Walras, abstraction, i. e. theory, was necessary to conceive the individual as separate from society, or the State as separate from society. Otherwise, the only reality which existed, in his view, was «man in society» and «the individual in the State» (Walras, *ibid*, p. 91). To distinguish precisely between the two spheres of influence, he raised a few basic questions : «How far have men a right to act as individuals, that is, freely? When does the duty arise to act

within the prerogatives of the State, that is, authoritatively?» Finally, the problem of justice : What are the things that men can enjoy individually, that is, unequally? What are the things they must share in common, that is, equally.' Walras' answer in the form of a synthetic statement was : «Liberty for the individual; authority for the State. Equality of conditions; inequality of positions: This is the general formula for the constitution of the social science» (Walras, 1898, p. 459),

The first requirement, «Liberty for the Individual» and «Authority for the State», does not need much explanation since this is a necessity in any civilized society and one cannot exist without the other. The difficult problem is practical in nature and refers to that precise line between the two spheres of influence but it is not an impossible task once that line has been traced accurately in theoretical terms. Here is how Walras sees this issue :

«The economic conditions of society - agricultural, industrial and commercial - are the terrain where the individual acts and moves forward. The moral conditions of society - property, taxation, family and government - are the atmosphere of the milieu where the individual lives and breathes.

That this terrain be solid and resistant, free of impediments ; that this atmosphere be healthy and invigorating clean of every unjustified privilege - this does not depend upon the individual but rather upon society itself; it requires both social interest and social justice and this is the object of political economy and social science ; it is the purpose of social progress» (Walras, 1896, pp. 91 -92).

There is not much one can add to the above diagnosis. As far as the ultimate goals are concerned, Walras was a master in formulating and defending them. The rights of individuals in their proper sphere, social interest, social justice and social progress -who could envision a better way to link them together than Walras in the above passage? It is only when the practical side of the issue emerges that Walrasian recommendations are open for debate and criticism.

As far as the second requirement of «Equality of Conditions and Inequality of Positions» is concerned, some explanation becomes necessary. «Equality of conditions» refers to the concept of true equality as expressed in Plato's aphorism : «Do not impede the sons of slaves to raise themselves to the rank of a king ; nor impede the sons of a king to fall to the rank of a slave»! This can be correlated with the concept of commutative justice represented by a balance in exchange of commodities at equilibrium prices (two equal va-

lues being exchanged) or by equal conditions in a competitive race of any nature or by social conditions in a society without unjustified privileges and without discrimination of any sort. In this respect Walras was very clear on how far justice of equality goes. He wrote : «it is a violation of justice, this form of justice that: I call commutative justice, whenever to certain of the entrant competitors a considerable advance is granted, or whenever certain obstacles or barriers are set on road.» Walras, 1896, p. 160).

«Inequality of positions» refers to the true concept of justice of equity so well expressed in the New Testament : «Give to the Caesar that which belongs to Caesar», which means to give to each one what is due to him. This can be associated with the concept of distributive justice where the concern is to give to the winner of competition the full merit or value of his performance, which by definition is unequal when compared with others. This is the case' and the only case, under conditions of stable equilibrium if we refer to economic life. Walras again is very clear when he writes :

«It is also a violation of justice, this other form of justice which I call distributive justice, if, or when, all competitors have departed from the same point and have the same field to run and yet in the end to pretend that all have arrived at the same time at the target or to reward each one with the same equal compensation regardless of the order in which they reached the target». Walras, Ibid, pp. 160 - 161).

As is evident from the above presentation, Walras wanted both Justice of Equality and Justice of Inequality but with such a precise qualification that it avoid not only the Marxian dilemma but in fact provides the embodiment of the most perfect form of justice. From here on it is easy to understand how right he was in calling upon his contemporaries :

«Let us reform society and leave it to the individual to reform himself accordingly Let us learn to reconcile the unreasonable claims of both individualism and communism ; this would dispense us from remedying the consequences of an excessive individualism by lopsided communism, be it in matters of morals or political economy. Let us transform the conditions of moral experience from a new conception of human destiny deduced from a new social idea ; and finally realize that ideal - this is, gentlemen, what we have to do in my view. Certainly this is a rough and tough task ; but it is the one that history has evidently assigned to us, not the history of facts, always more or less left to the play of force and hazard, but the history of ideas, governed exclusively by laws of human spirit» (Walras, Ibid, pp. 93 - 94).

If only this message of Walras would have been taken seriously at the proper time, the 20th century most probably would have escaped a violent social revolution to the left (Communism) and an equally violent social revolution to **the** right (Fascism) neither of which solved the Social Question. Unfortunately there is another weak point in Walras the social reformer, and that is his practical proposition of the nationalization of land and the abolition of taxes.

5. The Walrasian **Proposal of Nationalization of Land but not Collectivization of Agriculture or Society**

Let us take a look at Walras' concrete proposal of what he thought was the complete solution to the social question. It was composed, as mentioned above, of three parts. The first point was the nationalization of land, not an expropriation in the communist sense but rather a repurchase by the government of all land in private hands and paid for by a special issue of public obligations maturing over a certain period of time and carrying the current rate of interest. Because they would receive proper indemnization, the landowners would not sustain a loss. At the same time this was not collectivization of agriculture or society since this land would be offered by the government to private entrepreneurs who would bid highest price as rent and it would be used as the needs of the people required for food and other purposes. The rent previously collected by private landowners would now go to the State.

The second point was the recommendation to abolish all taxes since, according to his calculations, «the total amount of rent in a country corresponds naturally to the needs of public services in this way suitably endowed» (Walras, 1898, p. 412), All is based on the idea that in a progressive society where population increases, the rareté of land will increase too and thus a surplus - value of rent will automatically ensue. In the prevailing system, according to Walras, this surplus - value unjustly goes to the landowner, whereas in the new system after nationalization it would go to the State. Thus a solid financial basis for public needs would be provided. As Walras put it, «The State, owner of land, will live on the revenue from the soil ; it will use a part to cover current expenses of public services and it will use the rest for the accumulation of capital in the proper way for the public interest. The State does not borrow any longer» (Ibid, p. 471), if only modern governments could contain their Gargantuan appetites for spending within these limits! But in the Walrasian system with 100 per cent Numeraire currency and financial system as included in the third point of the program there would be no alternative but to obey such limits.

A similar proposal, unknown to Walras at the time of the initial conception of his plan, was made earlier by a German economist, Herman Henri Gossen, who in 1854 published a book, «Entwicklung des Gesetzes des Menschlichen Verkehrs» (Development of Laws of Human Interactions). Walras had already made public his nationalization of land project in 1860 in a memorandum «On Taxation in Canton Vaud» and later he presented his «Mathematical Theory of the Price for Land and its Repurchase by the State» in a communication to the Vaudois Society of National Science in Lausanne on November 17, 1880. This was also reprinted in the «Etudes d' Economie Sociale» (p. 267 ff.). In this latter study he began his calculation based on Gossen's first two tables and then added his amendment of a flexible rising tariff for rents so that his project appeared mathematically viable.

Walras admitted that his project would have a deficit for a number of years and «the public debt consequently has to increase for the difference but this difference would never exceed the normal value of the land». (Walras, 1896, p. 346). But, concludes Walras, «When the process of amortization (about 65 years) is completed then the full amount of rent would be available for public expenses and all taxes can be suppressed. The social interest and social justice would be perfectly satisfied, the social ideal would be realised». (Ibid, p. 347). These are the comments of Walras on Gossen's plan as amended by him. In a footnote he thought that the same method would also be applicable to the repurchase of mines, railroads and other natural and necessary monopolies where the principle of free competition cannot work.

What can be said against this proposal for the nationalization of land? In general it is difficult to counter - argue theoretically with Walras. For him the project seemed to be rationally free of any contradiction. He started with a sort of axiom : «Nature has given the land to all of us and personal skills to each one». (Ibid, p. 473). He saw two categories of social wealth for distribution - land and personal skills, versus two claimants - the State and the individual. According to his standard of justice, «the principle of inequality of positions requires that personal skills go to the individual whereas the principle of equality of conditions requires that the land belongs to the State. » (Walras, 1898, p. 470). A synthetic concept of property, therefore, adjudicates the land to the State, thus providing sufficient public revenue and justifying the abolition of taxation.

Walras was totally against income tax, which he thought violates both social interest and social justice. For him «slavery, serfdom and proletariat were three empirical phases of the same question - namely, that of property and taxation

or the distribution of social wealth among men in society». (Walras, 1896, p. 144). Because of his opposition to income tax he no doubt was accused of exaggeration and socialism. To this he retorted : «I am ready to accept the accusation since I consider myself precisely a democrat socialist», for the reason just given and the repeats the same statement.

The third point, which is not specifically mentioned but is understood as an integral part of the project, is to let the economy function by itself under the superior rule of competition as soon as the land has been nationalized and taxation has been abolished. The essence of this part has been described by Walras as follows :

«To see that in the satisfaction of the producer's interest lies the satisfaction of the largest and best ordered interest of the consumers ; to reject consequently any system of privileges and monopoly, of tariffs and maximums, of dues for importation or exportation, of any administrative intervention with the scope of regulation and protection and permit *laissez faire, laissez passer*. This is the superior principle of production of social wealth formulated by Quesnay and the Physiocrats, accepted by Adam Smith and the British School, developed and popularized by Jean Baptiste Say and many others». (Ibid, p. 47).

Walras' ultimate goal remained the realization of his double concept of justice of equality and inequality by preserving complete individual freedoms. He thought that by the nationalization of land and the abolition of taxes this would be achieved. He was so elated about his dream that the old regime would one day be terminated and that the State as owner of the land could subsist on the rentals and taxes would be abolished, that he wrote in regard to that future day : «The modern world would cure the social scars that the ancient world did not know how to do». (Walras, 1896, p. 474).

6. The Realization of Walras' Dream Without Nationalization of Land

With regard to Walras the social reformer, his work has to be divided in two sections : one part which is consistent with, in fact complementary to, the law of general equilibrium in pure economics, and the other part which is not, specifically the proposal for the nationalization of land.

The consistent part refers to a masterful analysis of the Social Question up to the point where Walras developed the concept of a superior law of social solidarity which can easily be converted into a law of social equilibrium. This in turn can be linked to the economic law of equilibrium and in this way a common base is created where both social interest and social justice can be fulfilled. This actually was the dream of Walras in theory but he could not realize it mainly because of his rather puritanic concept of science and also in all probability because of his commitment to the nationalization of land as a definitive solution to the social question, prior to a complete analytical investigation of the issue.

Walras kept the study of production exchange and capital formation separate from the distribution of income, thinking that there was a moral conflict between the two: social interest was considered whereas social justice was neglected. He never came close to recognising that social justice, like competition, in fact together with it, as a rule for conduct in real life has to be implanted as a point of law and custom into the daily process of production, exchange and distribution of commodities and implicitly incomes. And this can be done in practice. Once the government has introduced conditions of general equilibrium, a law of social and economic justice could require that all business transactions be concluded at equilibrium prices where in addition to the real cost of production (paid or imputed rent, wages, interest and taxation) only an adequate normal rate of profit be included.

In the formulation of the double principle of social justice where the ideal of equality was integrated with that of inequality, without creating a contradiction, Walras' greatness reached a peak in terms of power of reasoning and of his supersensitivity toward the destiny of so many fellowmen who during centuries have suffered the all effects of social inequities. But again he failed to see that the first part of the ideal of justice - the equality and social conditions - can be achieved for the living generation better by proceeding with a reasonable and limited social reform to neutralize social inequities unherited from the past. This can be done before or in conjunction with the introduction of stable equilibrium conditions.

Finally, Walras did not perceive that if all factors of production including government receive from the national product a revenue or return determined by one and the same principle of marginal utility (in evaluation) and marginal cost (in production), then the ideal of social equity, consistent with his concept of equality of conditions and inequality of positions, has been fulfilled.

All these alternative ways of thinking which are organically tied to the Walrasian law of general equilibrium in pure economics, lead to the conclusion

that the second part of Walras' work as a social reformer, specifically the project for the nationalization of land and abolition of taxation, must be abandoned as being inconsistent with the rest of his major system of thought.

Probably the most objectionable part of his project, speaking analytically, is the fact that nationalization of land creates an absolute monopoly in the hands of the State, a strange and contradictory element when compared with the law of general equilibrium. Monopoly, regardless whether in private or public hands, is a disequilibrium element associated with less economic and social efficiency. And an economy cannot remain unaffected if one important factor as land is less efficient than the others. There is also the possibility of developing political corruption and favoritism in the decision-making process of who is to get land or not, even when this is connected with an action service. For all these reasons, the proposal for the nationalization of land must be relegated to the field of history of economic thought.

What remains to be done is to make known the consistent part of the Walrasian heritage, both in Pure Economics and Social Economics, and to supplement it with the missing parts, theory and practice, and thus complete the study of a free, just and stable economy and society where the social question would finally be solved through a normal functioning of a system. That is actually what Walras wanted but the life of a man is oftentimes too short and the work, especially in science, is never really furnished. I believe that complete social justice, as far as humanly possible, can be achieved anywhere in the world and without nationalization of land.

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AN ORIENTATION TABLE FOR SOCIAL ECONOMICS

Building blocks:

Co = pure competition in diverse forms

Nu = numeraire currency

Mo = pure monopoly in diverse forms

Anti-Nu = Anti-numeraire form of currency (paper money and monetized credit)

$R_1, R_2, R_3, \dots, R_7$ = the institutional and legal framework attached to each [model]

Models:

$M_1 = 100\% (Co + Nu) + R_1$ The Wairasian system of general stable equilibrium conditions at its limit of perfection + (Pure Economics) + (Pure Social Economics)

M_2 — classical and neo-classical economics assuming a small degree (around 5%) of monopoly and anti-numeraire

$M_3 = N. B.$ The area of minor disequilibrium where competition and numeraire prevail

$M_4 = 50\% (Co + Nu) + 50\% (Mo + anti-Nu) + R_4$
A system of unstable equilibrium or «equilibrium with unemployment» as Keynes called it.

N. B. The area of major disequilibria where monopolies and anti-numeraire prevail

$M_5 =$ a mixed economy where monopolies and anti-numeraire prevail (US capitalism in the 1980s)

— Social Economics of Structural Reforms ..—

- Social Economics of Status Quo
- Radical (Marxist) Social Economics.

$M_6 =$ a government planned and controlled economy
(about 95 % of the Soviet or Chinese type)

$M_7 =$ 100 % ($M_0 + \text{anti-No}$) + R_7 The Marx-
ian system of total revolution at its limit or
pure and perfect state monopoly.

N. B. Factor R_1 refers to a most perfect form of a Central Bank, private
banking and other financial institutions, stock, exchange and commo-
dity markets, government business and finances, social and economics
environment including the balance of international payments.

FINAL REMARKS : TOWARD A THIRD REVOLUTION IN SOCIAL ECONOMICS

1. Social Economics as a Close Relative to Pure Economics

With the Orientation Table and by taking the first Model M_1 which actually represents the Walrasian system, one can see how far Pure Economics goes and where Social Economics begins.

$$\text{Model } M_1 = \text{Eco } 100 \% (\text{Co} + \text{Nu}) + R_1$$

Eco — economic system

Co = pure competition

Nu = Numeraire currency

R_1 = the institutional and legal framework consistent with Co + Nu

Pure Economics as conceived by Walras pertains to the specific task of analysing an economic system of 100 % (Co + Nu) or the model of pure and perfect competition. To this in my work I thought we should add factor « R_1 »' i. e., the institutional and legal framework suitable to, that is consistent with the other elements, in the system, respectively pure competition and numeraire. With factor R we already enter the domain of social Economics that Walras considered to be outside of Pure Economics. Indeed, the holistic approach in social Economics inconceivable without considering the institutional and legal framework of a given system. If so, then social Economics starts at the point where Pure Economics stops, and it must be clear that the former cannot be conceived as a science without the latter. It is also true that the latter without the former has no chance for successful practical application if left to itself.

From this explanation the conclusion emerges that social economics is a direct relative of Pure Economics, but they both have an independent existence. One can say that pure economics may be perceived as the first part of social economics but with the understanding that the object of investigation and implicitly the tools of analysis are different. In any case social economics is not and cannot be a substitute for pure economics or vice - versa. This, I hope, clears a long-standing misconception about the relationship between pure and social economics.

Still another point needs clarification. We have to see a clear distinction between factor R on my Orientation Table which is analytical in nature and the existing institutional and legal framework in a given country at a certain time, which is historical. In other words, factor R indicates the institutional and legal framework of what ought to be (normative) in order to have a system of general equilibrium. The existing one in a given country and at a specified time corresponds to an «is-situation» (positive in nature). Thus for a social economist, factor R is a task to be fulfilled. A mainstream economist in turn would disregard factor R and deal only with the is-situation.

Further, if we want, we can add another factor, «S₁», i.e., social values, ideals customs and other ethnical and cultural values shared by the people in a given country but again filtered to be consistent with the rest of the system : factor R, Co and Nu. In this way the social economist is forced to be analytical, that is, not to take social values or business practices on their face value but rather to judge them as they correspond or not to the structure of a really free, just and stable society and economy as reflected in the Walrasian Model M₁. In this respect Walras was right in keeping, for analytical purposes, pure economics separate from social economics since he did not have or did not accept a theoretical link, that is factors R₁ and S₁, as a liaison between the two.

In brief, social economics does not appear to be contradictory methodologically to Pure Economics but rather complementary. While the social economist has his own task different from that of a mainstream economist, it is not contradictory. Consequently, each one should strive to do his work properly, to the best of his ability and nothing else. The animosity of the past perpetuated in the present between the two groups in the same profession cannot justiciably be prolonged.

2. The Necessity of Structural Reforms Almost Everywhere on the Globe

As to the other argument among social economist regarding the battle between those who favor *status quo* of the capitalist regime versus the orthodox Marxist group that sees no hope for improvement but in revolution, the new research programme can provide a more reasonable alternative which certainly may be acceptable to the two opposing groups. What we do not need anywhere on the globe is an open revolution (which is so destructive in human terms, as Berdyaev once said, «it does not solve per se any social problem») nor the perpetuation of the *status quo* of modern capitalism, which economically proved beyond doubt to be so productive but also so destructive in social terms over the long run.

What is seriously required from a social economist in the first place is a critical but fair examination of today's problems of the existing regime in any given country in order to develop a scientifically objective catalogue assets (social virtues) and liabilities (social evils). After we acquire a clear and precise picture of what is right (good) and what is wrong (bad) in a given country, we can proceed with the necessary and adequate structural reforms consistent with the basic conditions of general stable equilibrium.

«Necessary and adequate structural reforms», this is what we urgently need. This is the new message of the Third Revolution in Social Economics which is consistent also with mainstream economics. It is a better and more precise substitute for the usual elusive formula of «adequate or proper social policies», which, when it comes to practice, nobody really knows how to apply them in order to achieve the desired goals. Moreover such an elusive social formula gives the politicians in power a nominal *carte blanche* of legitimacy to impose an extra level of taxes on industrious people and to spend the money in the service of a social chimera.

Elsewhere in detail (Rugina, 1981) were described the structural reforms needed in the West in order to convert the existing capitalist system in disequilibrium into a better social order in equilibrium in the future. That better social order was called «social Liberalism» which stands for social justice and liberty. For the East the same thing was done by showing how to convert the present-day communist regime in disequilibrium into a more humane, civilized system called «Liberal Socialism» in the French tradition (Rugina, 1983).

These better alternatives for the West and the East were not conceived as a compromise but rather as an organic, rational and consistent product due to a rigorous analysis of the existing conditions and compared with the ideal conditions of a system of general stable equilibrium as envisioned by Walras. There is no other way out of the present vicious quagmire.

APPENDIX

THE COMPOSITION OF A NEW RESEARCH PROGRAMME (PARADIGM)

The new research program grew over the years and finally reached the stage of a methodological complex or apparatus composed of the following parts :

- I. **QuinJa Methodica** and the law of consistency in scientific arguments. Here it is the question of adopting a more comprehensive concept of science including five categories of problems, exhaustive in the Kantian sense : (1) Economic History; (2) Economic Theory; (3) Economic Ethics ; (4) Economic Policy ; and (5) Economic Doctrine or History of Economic Thought Quinta Methodica can be applied in all social sciences.

The law of consistency in scientific arguments says : Whenever a concept or theorem reaches the stage of being contested then the counter-argument must be of the same nature. Otherwise the argument in question cannot be solved ; it becomes an antinomy. With the help of this law, arguments like the Methodenstreit or positive vs. normative economics and many similar disputes can be solved satisfactorily.

Elsewhere I provided the proof of why certain values and value-judgments can be accepted within the realm of science and why Social and Economic Ethics can be included under the same roof of Sciences.

(Ref. The Problem of Values and Value-Judgments in Science and a Positive Solution. 1984).

- II. **The simultaneous equilibrium vs. disequilibrium approach** composed of a few interrelated theorems leading to the development of an Orientation Table which in turn is the source of other theorems all consistent with each other. These are :

- (1) **Axiom 1 : The Universal Hypothesis of Duality**
 The economic universe of a country of the world is composed of stable (equilibrium) and unstable (disequilibrium) elements, forces, institutions and values.
- (2) **Corollary:** Any issue, concept or theorem may have at least two versions representing the equilibrium and the disequilibrium aspect.
- (3) **Axiom 2: The Universal Law of the Natural Parameter of the Numeraire.**

Any economic system in order to reach and maintain a position of stable equilibrium (or stability -from-within) must have a very strong (at the limit 100 percent) natural parameter of the numeraire which in conjunction with a suitable major force (pure competition) and in adequate institutional framework (R), holds the whole system together. This is the law of the NaPaNu.

- (4) **The General Possibility Theorem:**

Given the duality in the composition of the economic universe, it is possible to conceive theoretically an unlimited number of economic systems.

- (5) **The Concept of the Orientation Table:**

A rigorous application of the General Possibility Theorem leads to the Construction of a methodological map of all possible systems (at the micro-and macro-level) which, however, for study purposes can be reduced to seven basic models. See : page 559. This Table can have both empirical and conceptual content depending upon the nature of the problem we are investigating.

Eco	= economic system
Co	= Pure Competition
Nu	= numeraire
R	= An adequate institutional framework
Mo	= pure monopoly
Anti-Nu	= anti - numeraire

- (6) **The Law of Consistency of the Institutional and Legal Framework:**

No force in any social or economic system can work in such away as to

produce and maintain stable equilibrium, i. e., an optimum allocation of resources with an equitable distribution of national income and wealth unless a suitable institutional and legal framework is provided which is consistent with the NaPaNu and the force of pure competition of free choice.

(7) The Compensatory Law of Full Employment :

In a system of general stable equilibrium the aggregate volume of investment, real income and employment can never shrink by itself (as under modern capitalism or socialism) but rather will adjust to the existing conditions (including the wishes of the people) in such a way that full employment of the available resources (human and natural) is ensured.

(8) The Impossibility Theorem :

According to the Orientation Table a tripodal Impossibility Theorem can be formulated :

- a) It is impossible by definition to construct one single, general theory (what Samuelson more recently called «a general theory of economic theories») capable of including and explaining all possible systems as indicated from M_1 to M_7 on the Table.
- b) It is impossible to realize in practice and maintain a workable free enterprise system with full employment, social equity and stability-from-within (stable equilibrium) unless, among other requirements included in Factor «R», a 100 % Numeraire- currency is fulfilled.
- c) It is impossible to sustain a political, economic and social dictatorship of any sort as long as a 100 % Numeraire-currency and financial system is retained and respected.

(9) The Walrasian System cannot be Falsified Empirically :

The Walrasian system as a limiting case (Model M_1) is immune to anomalies, relativity and uncertainty because it is assumed to be composed only of stable elements and forces; it is 100 percent consistent like Newtonian system in Physics and mechanics. Thus logically it cannot be falsified empirically in the Popperian or Kunnian sense.

(10) Three Rules of Reasoning:

In the new research program, in order to satisfy the three scientific criteria of Simplicity, Clarity and Consistency, the following rules of reasoning are recommended :

(a) The Indivisibility Rule:

Each of the seven basic models of the Orientation Table has its own identity (conceptual and empirical) in the sense of representing different economic worlds and therefore cannot and should not be mixed or confused with one another.

(b) The Plurality Rule:

For every given economic problem there are at least seven different solutions, depending upon the model assumed, starting with model M_1 and ending with Model M_3 on the Orientation Table.

All possible seven solutions are true and valid if the necessary and sufficient qualification regarding the assumed model has been provided.

(c) The Rule of Symmetry or Mutually Exclusive Cases

Whenever a solution to a given problem in model M_1 is positive, then, in model M_7 it is and must be negative by definition. If by chance this is not the case, then something went wrong with the analysis and a review is necessary.

This also is true if we consider the same problem in any model on the upper part of the Orientation Table and compare it with its reciprocal model on the lower part of the Table.

The central and most important piece of the new research program is the Orientation Table because here all the other elements meet and from here a number of fundamental conclusions can be drawn, with far-reaching consequences.

In itself the Orientation Table is much simpler than the Tableau Oeconomique of Quesnay (1758) or the Truth Table of Mittgenstein (1922) but at the same time it is much more comprehensive in content and application (See : Rugina, 1984).

(11) The Walrasian law of general equilibrium in its complete form appears much more complex than Walras envisioned. It can be reformulated in this way :

Given that : (1) a system of free markets is ruled by pure competition ; (2) all prices and incomes are expressed only in terms of Numeraire - currency; (3) capital formation is based solely on free, voluntary savings, of people ; (4) the banking systems (private and central banks) do not monetize credit ; the official money in circulation is Numeraire or 100 % -backed commodity money; (5) all credit in the economy is covered and limited by \ the amount of real income: (6) on the organized stock-, exchange and commodity markets only real transactions are allowed, pure speculations being prohibited real by law as being socially harmful; (7) private and public finances are conducted by the same rule of first income and then spending ; (8) all the necessary structural reforms to satisfy factor «R» and all other conditions of stable equilibrium are fulfilled - then equilibrium prices with simple and finite fluctuations are secured for the short and long run.

(12) Further Clarification of the Orientation Table

My Orientation Table is not and I stress not, a quantitative tool of analysis as much as Mendeleev Table or the Truth Table by Wittgenstein are not. Rather it is a methodological instrument conceived for orientation and clarification, as its name indicates. It is like a compass in navigation, which does not measure distances but rather shows the magnetic North and implicitly south and all other directions. Indeed this is the main function of the compass, leaving out the task of measuring distances as a separate technical operation.

So is my Orientation Table. It is a methodological instrument which helps first to orient ourselves when faced with an immense variety of possible economics systems or regimes which analytically are reduced to seven basic models around which all others can be arranged in an orderly fashion, i. e., systematically as required in science. In this respect it is correct to say that the Table shows the magnetic North in economic terms (Model M_1 of perfectly stable equilibrium conditions) and then implicitly the magnetic economic South (Model M_y of total disequilibrium, chaos) and all other directions.

The percentages used to identify the structure or nature of the seven basic models are not quantitative but represent proportions like the degrees of variation (90', 180', 270' and 360') on a compass card. For instance the nature of Model M_4 which characterizes a position of unstable «equilibrium with unemployment» as Keynes called it, can be described as a 90' (degrees) turn around of Model M_1 of stable equilibrium in the Walrasian sense. There is no quantification necessary in this description but only a quantitative change in the kind of proportions implanted in the system.

The visible element, which shows that the nature of my Orientation Table is not quantitative but rather purely conceptual and leaving out quantification for other purposes, can be found in the additional factor « R_1, R_2 etc.,» that is the institutional and legal framework attached to each model and which definitely cannot be quantified.

With this clarification, I do not feel that I belong to that group of economists called «quantitative thinkers» but rather to a new, rejuvenated economic and social school, oriented more to the future than the past, a new version of social economics.

Finally, according to the Table, the economic universe appears much more complicated than the way it was conceived by the classical and not less by modern economists. With the help of the Orientation Table we can map an exact location of a system of stable versus unstable equilibrium ; we can determine a position of minor (weak or strong) versus a major disequilibrium (again weak or strong), including a system of total disequilibrium. We can clarify further the concept of relativity and uncertainty as applied in economics and other social sciences. We can determine the limits of validity for many classical and modern theories.

That is enough for a professional economist or a social scientist to envision the fundamental importance of the Orientation Table which follows on the next page.

AN ORIENTATION TABLE FOR ECONOMICS

Models :

M_1 — Eco 100% (Co + Nu) + R_1 . This is the Walrasian system of general stable equilibrium conditions at its limit of perfection and in its more complete form.

Pure Economics or Economics of Certainty

M_2 — Eco 95 % (Co + Nu) + 5 % (Mo + anti-Nu) + R_2

This approximates the model used by Quesney, Adam Smith and other classical economists up to Marshall included.

The Economics of the Classical Laws with minor deviations.

M_3 = Eco 65 % (Co + Nu) + 35 % (Mo + anti-Nu) + R_3

This is a mixed economy where equilibrium elements still prevail but relatively begins to play a significant role. It is the area of strong minor disequilibrium.

M_4 = Eco 50 % (Co + Nu) + 50 % (Mo + anti-Nu) + R_4

This is a mixed economy of static nature and hidden stagnation. It is the true model used by Keynes butim properly called «Equilibrium with Unemployment». Actually it is the domain of the Economics of unstable Equilibrium. Keynes left out the limit 50 : 50 and dealt with the Economics of Relativity in general terms. Modern Capitalism in reality moved up and down around model M_4 or between Model M_3 and Model M_5 . Thus Keynes' observation of «Involuntary Unemployment» was correct.

Here begins the area of weak major disequilibria.

Eco 35 % (Co + Nu) + 65 %H (Mo + anti-Nu) + R₅

This is a mixed economy where disequilibrium elements prevail. Below this line the business cycle becomes unmanageable. It is the domain of the `Economics of Compound Relativity I`
Here begins the area of strong major disequilibria.

Eco 5 % (Co + Nu) + 95 % (Mo + anti-Nu) + R₆

This is the model of a decaying mixed capitalist economy where a Marxist or Fascist Revolution succeeded to overthrow the old regime and introduce a Centrally Planned and Controlled Economy. It is the domain of the `«Economics of Compound Relativity II»`.

Eco 100 % (Mo + anti-Nu) + R₇

This is the limiting model of total revolution disequilibrium and uncertainty which requires a government of absolute powers. It is the domain of the `«Economics of Pure and Perfect State Monopoly»` or Pure Uncertainty.

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