

NICHOLAS GEORGESCU – ROENGEN 110 YEARS SINCE THE BIRTH OF THE FAMOUS ROMANIAN

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Abstract. *On February 4th 2016 we celebrated 110 years since the birth of the greatest Romanian economist until the present. Son of an officer, he graduated the military high school from Dealu Monastery. Further, he attended the courses of the Faculty of Mathematics from Bucharest. Eminent pupil and student, he obtains a scholarship for a PhD in statistics at Sorbona. He works a period in London with Karl Pearson, the founder of mathematical statistics. He also benefits from Rockefeller scholarship and he is co-opted in the team of Professor Schumpeter from Harvard University from which famous names in the field were part of, such as Leontief, Lange, Samuelson. Returned in the country, he receives different responsibility positions in specialized bodies. In 1948 he has to leave the country and immigrates permanently to the USA. He visited Romania in 1971 and 1994. Returned to the USA, he dies on October 30th 1994. Roegen's entire work was published in Romania and in the Romanian language in a form supervised by Nicholas Georgescu-Roegen at the Expert Publishing House and co-ordinated by a remarkable editor, Professor Valeriu Ioan-Franc. The eleven volumes of the series are included in the National Bank of Romania Library Collection and were printed between 1997 and 2010.*

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1. Introduction

Born Nicolae Georgescu, the pseudonym Roegen is Ne Geor reversed, used as a retronym, he was an American mathematician, statistician,

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pedagogue and economist of Romanian origin, the father of bioeconomics theory which presents a revolutionary mode of looking at economy.

He studied Mathematics at Bucharest and Sorbona, in the '30s of the last century. Obtaining a scholarship from Rockefeller Foundation, he studied the economic sciences at Harvard, where he had Joseph Schumpeter (1883 – 1950) as a professor – the famous economist, with many disciples until our days. He suggested in 1936 to remain with him, within the department of economic sciences but the young scholar chose to continue his university career in the country at the University from Bucharest.

Returned to Romania, he received different governmental responsibilities. Together with other Romanian diplomats, in 1944, as general secretary of the Mediation Commission of the armistice between Romania and West-European countries, members of Allies, he decisively participates to getting closer the points of view of involved parties.

In 1948, when it was obvious that due to his diplomatic role in and after the Second World War, he was about to fall into the hands of security together with his wife, he emigrated to the United States of America.

Arrived again in the USA, N. Georgescu – Roegen teaches at Vanderbilt University (Nashville, Tennessee) from the '50s of 20th century. Here, he elaborates his most important papers, among which “The Entropy Law and the Economic Process” (1971). In 1979, appears at Lausanne the book “La décroissance. Entropie, écologie, économie”, in the translation of professors Jacques Grinevald and Ivo Rens from the University of Geneva. The book was actually an anthology, made of two chapters extracted from “Energy and Economic Myths” (1976) and from other two chapters from the innovative paper “Bioeconomics”. ”La décroissance”, enriched with a new chapter, “La dégradation entropique et la destinée prométhéenne de la technologie humaine”, will be republished in 1995, in France.

In 1976, with the celebration of the age of 70 years, it was published in his honour a volume which included reverential texts signed by many American laureates of the Nobel prize for economics. Starting with the '80s of last century, all of these consider Georgescu – Roegen a dissident thinker and go over the other side. Nevertheless, in the last part of his life, he was satisfied to see that his ideas become more and more present.

He died in 1994 in Nashville, the city where he spent more than half of his long and fruitful life, dedicated mainly to study.

2. Stage of knowing the person and works or in other words: little known in Romania, very known in the world

I think we are not mistaken when we consider Nicholas Georgescu – Roegen the greatest Romanian economist of all time. There are specialists and not a few who dare to even call him the “economist of the millennium”.

We showed previously how he played with his name, by reversing the abbreviation of his birth name. And he did not stop here, having the courage and thinking to also turn over the economic theories ruling in his time, inventing and revolutionizing the global economic science through a new approach: bioeconomics. Bioeconomics reconciled, on solid mathematical grounds, the idea of industrial development and the newly idea of ecology, appeared in the '60s of last century. We will describe later the scientific principles of bioeconomics in other part of our presentation. Here we are supporting the merit ad we are saying that USA economy and implicitly, global economy owes a lot from its actual development, favourable for the human and all living beings on the Earth, to Georgescu – Roegen.

Related to the global significance of Georgescu – Roegen’s contributions to revolutionizing global economic science, Paul Samuelson, the first America winner of the Nobel Prize for Economy, who created the most representative course of economy known by mankind, called Georgescu – Roegen “the economist of economists”. And that’s not all. Paul Samuelson and Joseph Schumpeter, another leader of global economy, wanted very badly to have “the economist of economists” besides them, in their exclusive group from the White House formed in the '60s - '70sof last century, which laid the bases of American economy development.

But let’s come back to the typical Romanian moments and we can notice that a great part of Romanians do not know the life and works of Georgescu – Roegen and especially how and why he left from Romania.

During the Second World War, Nicholas Georgescu – Roegen worked as director at the department of imports from the Ministry of Finances. Noticing that imports from Germany are bigger than the exports to the same country, the director made a list with products which will no longer be imported. On the list of forbidden products were also mentioned “women silk stockings”, made in Germany. The director’s measures triggered the fury of some ladies from high society, whose clothing needs proved to be stronger than Georgescu – Roegen’s argumentation for balancing the

import-export weight, being immediately fired. Nevertheless, despite women stockings that were weighty in his biography, the scholar was appointed in 1944 as general secretary of the Mediation commission of the armistice between Romania and Western countries. Due to this position, this time he got on the wrong side of more than just some ladies without stockings, namely the security bodies under Soviet reign. For fear of them and with the support of American espionage services, Georgescu – Roegen and his wife were removed secretly from the country, in the coal shipping room of a Turkish vessel.

Georgescu – Roegen declared the following in 1992, little before dying, about his true dream: “My dream was to live and work there, not in Nashville, across the seas and in other world, to live in my native country, not to usurp positions with undeserved political privileges, but to serve it according to my strengths, as I did as professor in Găești, at Dealu Monastery, at «Mircea cel Bătrân» High School from Constanța, at the School of Statistics from the University of Bucharest or as tireless servant of the people, as organizer of economic and financial statistics, spending hours and hours next to Hollerith machines, fantastic innovations in that time. A tradition was formed that if a job that requires unconditional work, it was given to Georgescu – Roegen. This is how it is explained, without belonging to the «aristocratic» exclusive group –which greatly dominated the public and bureaucratic life from Romania in that time -, I was appointed as general secretary of the Armistice Commission, only because it required skills and ate life. Me and relatively a few others did not leave the country to remain there – *ubi bene ibi patria* -, but to join those who, being idiots like me, believed that they will contribute to the operation through which the Americans will force the Muscovites to leave Romania alone”. A profound, rarely encountered page of patriotism, Georgescu – Roegen returned to the country after the Revolution in a funerary urn. His books however, published also in Romanian by the National Bank of Romania, are alive and very actual. How their author used to say: “The joy of living is the true purpose of economic activity”. In the spirit of this thought, we ought to also consider his papers, to appreciate the person and work and to place him with deep consideration in his deserved place, that of the greatest Romanian economist of all time.

3. Nicholas Georgescu – Roegen, founder of economic school

As the academician Aurel Iancu outlines in his reception speech, the scientific contributions and force-ideas of Georgescu – Roegen can be divided in three areas and phases of research: (1) statistics – mathematics; (2) problems of mathematical economics treated in the limits of standard (neoclassical) economic school; (3) economic and methodological problems treated beyond the standard economic school, in a new concept and different methodology, which make him an authentic founder of a new school of economic thinking [10, p. 4].

The first phase extends between the years 1930-1933 and includes research in the field of mathematical statistics. His PhD thesis “Le problème de la reserche des composantes cycliques d’un phénomène” was presented in 1930 at the Institute of Statistics of the University from Paris. In October of the same year, his PhD thesis was published entirely in “Journal de la Société de Statistiques de Paris”. In this way, it prevailed through the original solution given and used in spectral analysis, being one of the most important chapters of later mathematical statistics. His method was then used by many statisticians and economists, among whom Joseph A. Schumpeter in his famous work “Business Cycles” [12, p. 169]. In 1932 he published in “Biometrika” magazine the memo “Further Contributions to the Sampling Problem”. With this work, he is classified together with R. A. Fischer, J. Wishart, C. C. Craig, V. Romanovski as creator of the theory of selection moments and semivariants. In 1933 he publishes at Imprimeria Națională Publishing House, Bucharest the volume “Statistical Method. Elements of mathematical statistics”, which was constituted as an event in the statistical world from Romania of that period [12, p. 170].

The second phase (1934-1966) includes research carried out in the limits of the standard economic school, but critical for many scientific contributions of his predecessors. In this phase, his research was carried out on three areas: consumption, production and agrarian economy [10, p. 5]. In the consumption theory he approached the integrality problem in the demand theory, the lexicographic order of preferences, the utility problem, etc. In the field of production modelling and economic development, he brought remarkable contributions by publishing some articles with great profoundness, such as: “Relaxation phenomena in linear dynamic models” (1951), “Some properties of the generalized model of Leontief” (1951), “Limitationalism, limitation and economic exchange” (1955). Analyzing the

economic and social life from the overpopulated countries with agrarian economy, he notices that the work force no longer has limits and as a result, according to his demonstrations, work force no longer complies with the rule of marginal sizes “decided” by standard economy. The peasant works more than he can be rewarded through prices obtained for his products sold on the market that functions according to the rules of marginal values [10, p. 5].

The research from the third phase (1966-1994) is carried out according to a theme and mode of approach different from previous ones and causes a total and final rupture from the paradigm of the standard economic school and lays the bases of a new school of economic thinking. The famous methodological essay stands out with works from this phase, under the form of an introductory chapter to the book “Analytical Economics”, called “Some orientation elements in economic science”, phase developed through the publication of the book “Entropy Law and Economic Process” (1971). The subjects related to the perspective of natural resources and the environment are treated and interpreted through the prism of entropy law, economic development and institutional factor, arithmomorphism and dialectics in economic science. All of these contributions underlay his new concept, known in the economic literature under the name of bioeconomics [10, p. 5].

4. N. Georgescu – Roegen, founder of bioeconomics

From those above it results that Nicholas Georgescu – Roegen was a distinguished mathematician – statistician and one of the great world economists from the 20th century. Bioeconomics, the founder of which he is, is studied today in economic institutes and foundations and provides reflection subjects for important international congresses and symposiums. But more importantly, the European Commission adopted a strategy for sustainable bioeconomics in Europe which can bring over 2000 billion Euros in EU.

Bioeconomics is an economic subject initiated and developed by the Romanian scholar Nicholas Georgescu – Roegen. He grounds his concept using the entropy process in the analysis of economic processes, with the help of his basic paper “Entropy law and economic process”, published in 1971. At that time, one of his main disciples, professor Jacques Grinevald, from the Institute of development study of the University from Geneva, states that N. Georgescu – Roegen “master by formation and vocation of

mathematical statistics, became the dissident by excellence of the Occidental economic science, recognized as founder of a new paradigm, which he called bioeconomics” [16, p. 3]. The same professor claimed that the encyclopaedic work “Entropy law and economic process” is “as revolutionary as the book of Copernic from 1543 and that of Darwin from 1859”.

Bioeconomics, which N. Georgescu – Roegen opposes to classical economic thinking, is a science that analyses the economic activity as a continuation of the biological evolution by extrasomatic, cultural and social means. It means development, of course, but not through an endless increase of the production of material goods, as the standard economic thinking suggests. Such increase has its limits, beyond which the human species is meant to disappear and the Romanian scholar proves the existence of these limits, more and more threatening, through the action of the second principle of thermodynamics, entropy. Entropy is the quantity of diffuse and unusable energy from a closed system. Georgescu – Roegen considers biosphere such a closed system and the human economic activity an entropy-production activity which will successively consume all energy resources of the earth. He saw the escape from this endless “fight of mankind against the environment and itself” in a new ethics which will take into account the needs and security of future generations. From here the necessity of production reduction, “decrease” and correct understanding of the development concept, which must not be a function of the production of physical goods.

Apparently irreconcilable areas, as economy and ecology were considered at the end of 1960, are brought together and substantiated from mathematical and physical point of view by Georgescu – Roegen. The scholar states and proves that, on one hand, the solution to the decisive problems of the environment is closely related to the scientific, technological, computer progress of human society, but in the same time, only the existence of the general progress of human race itself cannot solve automatically the ecological problems created by the people and accelerated development of mankind, starting with the industrial revolution. The decisive factor, states N. Georgescu – Roegen, is the will of human society, as a whole, to solve existing problems.

5. Deep care for Romanian agriculture and peasant

The agrarian economic research of N. Georgescu – Roegen focuses on the peasant philosophy, the agrarian economic theory, the statistical analysis of production processes from agriculture. They take into account the periods of the '30s of 20th century.

The concept of Georgescu – Roegen concerning the economic theory and the study of Agrarian Economy was published for the first time in 1960, and supplemented in 1976 with the volume “Energy and Economic Myth” (Pergamon Press Inc., New York, Toronto, Oxford, Sydney, Frankfurt, Paris).

Expert Publishing House published the complete works of the Romanian scholar. The second volume treats the Romanian economy and is structured in three parts:

- Part I: Romanian economy with the following content: Agricultural inventory, Agricultural trade of Romania during 1919-1938, Individual income, Prices, Life cost, National wealth.
- Part II: Agriculture with production processes in agriculture and food industry, Economic theory and the study of agrarian economy, Institutional aspects of rural community.
- Part III: Demography and other themes.

The interest for the chances of populations on more than 2/3 of the inhabited surface of the planet, including in Romania, determined N. Georgescu – Roegen to focus on the study and analysis of differences between rural-agrarian economy, on one hand, and non-agricultural, industrial economy, on the other hand. His wide bibliographic explorations lead him to the conclusion that agrarian economy, although a reality, does not have a theory, even if it is absolutely necessary especially in the countries with numerous rural population, rural overpopulation, among which is also Romania.

In elaborating his agrarian theory Georgescu – Roegen starts from several fundamental principles: (1) the theory is only a logical file of concrete knowledge existing in a given phenomenological area; (2) the theory must correspond to a specific area of reality; (3) the theory reflects accordingly only one system; (4) the economic theory can be operational at the elaboration of economic policy only if it takes into account a certain type of economy.

In treating the historical evolutions of Romanian agriculture N. Georgescu – Roegen focuses on the land property and the use which at the beginning of the '30s of last century were as follows: the average private land property was in Romania of 3,5 ha, ranging between 9,88 ha in Dobrogea and 2,76 ha in Transylvania or 2,54 ha in Oltenia.

Between 1931-1932 the largest income at the unit of surfaces came from vineyards, 1550 lei/ha, followed by gardens of vegetables, 1095 lei/ha, orchards, 972 lei/ha, field cultures, 635 lei/ha.

The Romanian scholar approaches in this area also other themes: the typology of rural communities from Romania, the rural economy and traditional economic science, the size of rural communities, the economic physiology of rural communities, the rural traditions, the economic behaviour of the peasant in its relations to exterior world (to the city and townsman).

Concerning the economic behaviour of the peasant, Georgescu – Roegen combats the affirmations of governmental leaders who pretended that peasants have a proverbial indolence and do not have other aspiration than that of making a living. On the contrary, the scholar claims that the Romanian peasant is hardworking and wise and he builds the foundation of urban civilization development on this base [11].

6. Conclusions

Nicholas Georgescu – Roegen was a remarkable mathematician and one of the greatest world economists from the 20th century. The economic thinking of the scholar is substantially harboured by his formation as mathematician and statistician, but its visionary character cannot be understood without a careful and rigorous distinction between its different interdisciplinary components. Bioeconomics, which Georgescu – Roegen opposes to the classical economic thinking, is a science that analyzes the economic activity as an increase of biological evolution by extrasomatic, cultural and social means. This famous economist considers that the “economic process appears as a continuation of biological evolution, actually a transcendental extension of given evolution. This science explains not only the evolutionary character of economic process, but also the political and social aspects, related to inequalities between social classes or nations”.

N. Georgescu – Roegen offered us a clear demonstration at global scale of the principle that there is no “sustainable growth”, not even “zero

growth”, the decrease is inevitable for a truly sustainable development of mankind.

His remarkable contributions, enjoying large recognition, brought him almost all deserved scientific titles, distinguished professor and honorary professor at Vanderbilt University, honorary member of the American Economic Association, member of different scientific organizations from America and Europe, including of the American Academy of Arts and Sciences, member of the Econometrics Society, honorary member of the prestigious scientific institution “Phi-Beta-Kappa” from Vanderbilt University, visiting professor and invited to held conferences at great universities in the world, including at the Romanian Academy and at Romanian universities.

In this way, Nicholas Georgescu – Roegen closed his brilliant career. And we can observe Roegian horizons, as De Solla Price, only climbed on the shoulders of our giant scholar in order to learn from his distinguished lessons left as inheritance to us.

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