Real Academia
de Ciencias Económicas y Financieras

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GOBIERNO DE ESPAÑA
MINISTERIO DE EDUCACIÓN

con la colaboración de

Obra Social "la Caixa"

Barcelona 2012

Publicaciones de la Real Academia de Ciencias Económicas y Financieras

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The world I experience it/ discurso de ingreso en la Real Academia de Ciencias Económicas y Financieras … Momir Đurović, y contestación… Lorenzo Gascón.

ISBN-13: 978-84-615-8343-0

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1. Discursos académicos 2. Desarrollo sostenible
3. Economía ambiental

HC79.E5

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(Art. 41 del Reglamento)

Editora: © Real Academia de Ciencias Económicas y Financieras, Barcelona, 2012

ISBN-13: 978-84-615-8343-0

Depósito legal: B-12695-2012

Nº registro: 201233215

Imprime: Ediciones Gráficas Rey, S.L.—c/Albert Einstein, 54 C/B, Nave 12-14-15
Cornellà de Llobregat—Barcelona

Publicaciones de la Real Academia de Ciencias
Económicas y Financieras

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Discurso de ingreso en la Real Academia de Ciencias Económicas y Financieras leído,
el 19 de abril de 2012
por el Académico Correspondiente para Montenegro

EXCMO. SR. DR. D. MOMIR ĐUROVIĆ

Y contestación del académico de número

EXCMO. SR. DR. D. LORENZO GASCÓN

Barcelona, 2012

Sumario

EXCMO. SR. DR. D. MOMIR ĐUROVIĆ

THE WORLD I EXPERIENCE IT

Your Excellency President of the Royal Academy of Economic and Financial Sciences of Spain, it is not easy to decide which topic to discuss in front of such a distinguished audience, especially when some of you know that I have spent most of my professional life working in the field of electrical engineering, mainly global and renewable energy problems. However, as with all the scientists in their late and mid-careers, my interests have been gradually shifting towards global issues, where these issues do not only refer to those related to the energy but more to the problems of the future. I have given talks on issues related to the future on numerous occasions, which has proved to be a rather unpredictable and unrewarding task. However, in the contemporary world that we live in, the basis on which one could forecast the things that may happen in the future has become rather uncertain. But, to point out something that may happen is another issue. It should be, as Denis Gabor said ¨Not possible to predict the future, but it should be invented¨.

Nowadays, we mainly agree that by 2050 year our children, as well as, unfortunately, not many of us, will live in the world of around 9.5 billion people characterized by moderate economic growth. GDP at the global level will probably reach its triple or even quadruple value from around hundred trillion dollars to around three hundred trillion dollars by the mid century. Food demand shall be doubled compared to the present state, partly due to the increase in the population and partly due to the requirements to eradicate poverty. The energy demand, in the best case scenario, shall be increasing in line with the GDP, while the investments in the energy infrastructure shall grow faster along with having the value of the water sources increase dramatically, but neither linearly nor continuously. Climate change, even in the best case scenario, shall affect the increase in the cost of living, shall endanger the stability of our planet Earth as well as affect our ability and efforts to decrease and possibly eradicate poverty, which is one of the core aims within the Millennium Development Goals. We are very much likely to take better care of the environment, which shall enrich our lives, however, making the world population poorer.

Under such circumstances, the main issue that imposes itself is what we should do in order to avoid all the pitfalls that such prognoses may bring along? It

has become a common belief that by resolving the economic growth issues, one may resolve all the problems that we are facing and will be facing in the future. However, the economic models, which have been used as a basis for our society's development so far, dominated by the uncontrollable market logic and deregulation, introduced in an inappropriate and aggressive manner into our lives by Regan's 'executor' Mr. Alan Grinspan, resulted in the development of a special type of greed. The economic growth was almost doubled, compared to 1960 year. No one, however, is clear how that happened and at what cost. Such growth, indeed, pulled many people out of poverty, dragging, however, other in it while, simultaneously, enabling around 20% of the population to live prosperously. Such growth mostly has not care of our natural environment and the potential social consequences, while measuring of the economic performance was based on the wrong presumptions, and illusions that growth, wealth and well being were the same concepts. Such development was mainly based on the financial and physical capital. It was also based on the natural resources of the Earth, where misuse of such resources has presented the worst practice in the history of mankind.

It seems that more important the topic, there are more confusions in trying to interpret what has happened in the past and may happen in the future. The main question nowadays is whether those are premeditated interpretations or not. Namely, are the voters intentionally manipulated under the veil of democracy and tendency to protect taxpayers, as the officers of the European Commission often say while they aim at a global centralism, or as the Speaker of the European Parliament has recently said, at achieving the so called World Government an idea which had presence in ancient Chinese and Indian as well as Greco-Roman thought.

Forty years ago, Club of Rome published Meadows' book 'Limits of Growth'. It was for the first time that the issues of sustainability and non-sustainability were raised at the global level, along with the issues concerning some potentially fatal scenarios. Although this report was printed in more copies than the Bible, it was essentially controversial and not accepted by all, not even by all of us, members of the Club of Rome. However, it became so popular that it is discussed even today in the light of some newly acquired knowledge, recognizing in it some new values. Not long after this report the Brundtland Commission happened, which defined the term 'sustainable development'. It was followed by the Conferences in Rio de Janeiro

and Johannesburg, Montreal, Bali. Copenhagen, Tianjin and recently in Cancun and Durham where the efforts were made to point out to the catastrophic consequences that different human activities had on the environment and to the unpredictable survival of the mankind on this planet.

Many organizations throughout the world have been organized, among which many environmental which have been opposing and are still opposing many human activities, especially those which may at any extent affect biodiversity. It seems that the center of their interest has become the biodiversity and not the human being, which many of those environmentalists even openly state. Let me be blunt in saying that it seems less important whether or not mankind shall survive on the Earth compared to the importance and survival of biodiversity. At the same time, those concerned with biodiversity issues seem to forget that certain flora and fauna tend to disappear over time, while the new ones appear.

On the other hand, especially after appearance of Bjorn Lamborg's book 'Skeptical Environmentalists', those who wanted to prove that all those issues concerning men activities, biodiversity and environmental protection were just a myth of those who tend to rule the global world, appeared at the global scene. Such, Vaclav Klaus wrote that a person who did not live in the communism cannot possibly understand the environmentalists. Ian Plimer, similarly, argues that after the threat of the world by the political blocks ceased to exist, the Western countries have found a very productive topic – climate change – in order to motivate and make the world population more homogenous so that it could, in fact, create world, or, so called Global government.

It is obvious that this issue should rather be called the confusion on climate change, which, whether we want to admit it or not, seems to be a very good basis for manipulating the citizens and global population as a whole. By heading the environmentalists, along with being awarded the Nobel Prize together with the Intergovernmental Panel on Climate Change (IPCC) in 2007 year, Al Gore presented the temperature change in the past thousand years in the movie 'An Inconvenient Truth', using, instead of the exponential graph *¨hockey stick¨*, as Michael Mann did, which subsequently entered scientific terminology as a new term to be used. The IPCC published its *4th Assessment Report* in which the same approach was copied. Rajendra

Pachauri, President of the IPCC said on that occasion: 'IPCC's Fourth Assessment Report is a corner stone of our scientific knowledge on the climate change, as well as death danger for our Planet on which climate change is taking place'. In the world, there is much ado about this topic nowadays. The International Council for Science (ICSU), leading international scientific organization, admitted in its statement released at the beginning of the last year that there were certain mistakes in the 4th Assessment Report of IPCC, but that those mistakes were not significantly affecting the content of the report and that, therefore, it was not fair to blame its authors for them. The American National Academy of Science reacted with the Report signed by 250 scientists, supporting the issues presented by the ICSU, leaving, however, in some areas enough space for ambiguous interpretations.

All of those institutions claim that climate changes should be qualified as factual state which is consistent in its nature, emphasizing, simultaneously, the fact that human beings are responsible for changing the climate on the Earth. Those changes represent threat to our society and the ecosystem that we are dependant on. Those institutions seem to be especially sensitive to numerous recent attacks on those scientists who support the climate change issues, claiming that those who perform such attacks are in fact those who deny the existence of any climate change being 'exclusively inspired by special interests or dogmas as well as with their sincere wish to prove the credible alternative theory'. It is understandable that the IPCC, as well as other scientific associations dealing with the climate change issues, when producing mass and bounding reports, do make certain mistakes. However, such mistakes have been corrected. This group of scientists, politicians and environmentalists claim that they have not identified anything significant lately that could affect the fundamental conclusions relating to climate change. They mainly argue that the following happens:

- Planet Earth becomes warmer due to the increased concentration of gasses in our atmosphere. Snowy storms and rough winters (´weather change´), such as one in Washington and in other places cannot change this fact. Not even this year's winter could change it.

- Major increase in the concentration of those gasses, during the last century, has been the consequence of human activity, especially fossil fuels consumption and deforestation.

- Natural causes always affect climate change on the Earth; however they are becoming less relevant nowadays in comparison to those caused by the human activity.

We are witnesses of serious warnings, released even on daily basis. Such, James Hansen, NASA's leading scientist, stated : 'If we want to avoid the disaster, global society still has nine to ten years to reach an agreement about reducing carbon emission and green house effects'. Bruno Latour argued that 'Dangerous extremists are using the very same argument of social construction to destroy hard-won evidence that could save our lives'. Martin Rees, former president of the Royal Society, however, gives us fifty years approximately while the environmentalists from Potsdam University merely give us twenty years left, and recently Hawkins claimed for another 100 years left to move to space. A group of scientists and celebrities, that I was honored to be a part of, published in September 2009 year in *The Financial Times*, an appeal for decreasing the concentration of CO2 in the atmosphere to 350 ppm instead of 550 ppm. This story goes on.

In Copenhagen and then in Tianjin and Durham it recently was not possible to reach any agreement on climate change, while in Cancun modest steps forward have been made. When it comes to the ocean protection, perhaps the most significant steps forward were made in Kyoto by the end of the 2010 year. However, those steps are far away from being enough. It is, therefore, hard to believe that something significantly new would be happening in Rio after all. Some argue that the man is the cause of everything, while the others who either do or do not admit that the increased warming of the planet has been happening recently, argue that man cannot possibly be the cause but the natural processes on the Earth and in space instead – recalling to Milankovic's cycles, activity of the Sun, cosmic energy as well as the dislocations and movements of tectonic plates pointing out that no temperature increase has been registered since 1998 year, but that we are actually entering a cold period, a sort of a short-term Ice Age.

Those who oppose the global warming, argue that the Earth cannot be only considered as a system dependant on the change of one variable, CO2, and especially not on the change of only one part of it, which is the result of a human activity, where all the other variables and their components are left aside. Whatever calculations computers

make, no matter how sophisticated and fast those are, they become simple compared to the complex nature of the Earth whose atmosphere is sensitive to the processes which originate from the Earth's inner layers, from the oceans, atmosphere, the Sun and the Cosmos in general. The analysis of contemporary climate changes made by taking into consideration only one variable, i.e. CO2 or, to be more precise, just a small proportion of that variable, which, in this case is caused by human factor, cannot be considered a science as it would require us to forget all the other facts that we know about the Earth, the Sun and Cosmos. Model of that type must be wrong, those scientists claim.

In addition, they argue that if one takes into consideration the values of the CO2 concentration in the atmosphere as it was in the past, it may easily be estimated that, for most of the time, it has been higher than it is today, which means that the increase in temperature causes the increase in CO2 concentration and not vice versa, as contemporary environmentalists claim. When climate change is discussed, there are little or no geology, archaeology and history. The Earth is a dynamic system. It is currently in an Ice Age. The CO2 quantity in the air merely represents 0.001% compared to the total CO2 in the oceans, surface rocks, air, soil and in beings in general. It is naive to claim that human impact on the climate can be separated.

It is true that the *4th Assessment Report* of the IPCC has caused many misunderstandings although it has been officially supported and approved by many governments and institutions. One of such misconceptions is the interpretation of the existence of an Ice Age from 1280 year to 1850 year AD, as well as medial warming that occurred in the period 900 – 1300 year AD where it was recorded that the temperature was for several degrees higher than it is today, while there was no industry that could have caused it. In an inconvenient manner, the answer to this issue was offered in the Report by having the Michael Mann's temperature change diagram copy-pasted, which showed that all of us would be eventually scorched and laid down in ashes due to the human error and our numerous activities. Moreover, we often hear that the world approaches its own doomed destiny and an end, that we will all be dying slowly, in pain, being first dried out and then scorched in the warm gasses due the greenhouse effect, and, what's worst, during that process, all of us will be poor. And all of that should be considered as the consequence of our own error. In addition, the Report shows that 40% of the Amazonian forests shall be extremely affected by the global warming, what was in fact taken from the reports presented by

the *World Wildlife Fund*, the group of activists who lobby for the USA Government's environmental policy. Equally irritating are the data about the increasing ice melting at the mountain peaks and the possibility that Himalayan glaciers disappear by 2035 year. The former is taken from an anecdote published in the magazine *Climbing*, written by a student, while the letter was taken from the *World Wildlife Fund*.

All of this may be factually wrong as no relation between GHG and its concentration in the atmosphere has been estimated. Namely, decrease in GHG emission does not necessarily mean that their concentration in the atmosphere will be lower until one can firmly prove that men are the only factor influencing natural processes on the Earth.

However, it has been showed that the Report manipulated scientific research in order to satisfy the requirements of various political agendas. The scandal broke out when a hacker posted on the Internet e-mails from the Climatic Research Unit (CRU) at the British Anglia University, which is one of the main data sources for IPCC. The e-mails revealed a non-scientific approach and hostilities of the CRU scientists and their associates towards all those who opposed or doubted their alarming data on the global warming. One of the e-mails even contained ideas how to prevent those skeptics from having their works published in prestigious scientific journals.

Media craved such information and the governments became and are still pressured by the environmentalists' groups, which have resulted in a sudden awareness rising about the global warming issues. In such situation, it took eight years to explain the '*hockey stick'* issue. IPCC quietly, without any special explanation of warning, withdrew it from the Report titled '*Summary for Policy Makers'*. Meanwhile, many governments, politicians and environmentalists came to the conclusion that *IPCC's Assessment Report* represented the consensus of many scientists, which, in fact, it was not. It was, first and foremost, the consensus of numerous governments which all had their own political agendas. IPCC is, undoubtedly, the group of scientific and political organizations where environmentalists and government representatives establish their own agendas for various interests, while securing own sovereignty.

Many scientific reports oppose IPCC predictions on the increase of the extreme weather conditions, floods and droughts being the result of human activities, where

some of those scientists who write such reports become fired even in democratic countries. All such scientific research has been ignored by IPCC.

Unfortunately, scientific corruption reached beyond IPCC and CRU. A computer programmer Michael Smith recently discovered that NASA Godard Science and Cosmos Institute, as well as NOAA's Climatic Data Centre from North Carolina cut the number of their meteorological stations from 6 000 to 1 500. Most of those stations for temperature measuring have been showing lower temperature, which was opposite to the general wish to present the temperature as being higher than before. Lately, the IAC was asked to review the Report and the IAC group of ten very recognized scientists issued the report which stated that the *4th Assessment Report* has much misinterpretation and that all of them have to be taken into account in preparing 5th Report.

All these confusions and misunderstandings about one of the most important current issues on the Earth are a very good illustration of the world that we live in and our civilization, as well as the power of science and those who manipulate with its results. Is, in this case, true what Patrick Moor, the founder of Greenpeace said: *'Green movement has been acquired by the neo-Marxists who promote antitrade, anti-globalism and anti-civilization'*, or is it true what Al Gore has been trying to prove together with his followers, while consuming 220.000 kWh of the 'green' electricity annually in his luxurious home in Tennessee which he bought from his own company?

Do we really live in a time in which various groups such as *Trilateral, Bilderberg Group Illusionists from Yale, Salvage Society, International Council for Foreign Affairs, Ecumenists, Globalists*, *Common purpose*, or recently *Goldman Sachs bank, Moody, Standard Pools* and similar manage our own lives by skillfully manipulating, furtively citizens, governments, media and scientific data? Is the statement, presented by the authors of the bestseller *'Who Really Governs the World'*, that if you really want to know who rules the world you have to know what the *International Council for Foreign Affairs* from New York is doing?

No less confusion is caused by the issues relating to the sustainable development, economic growth, quality of living or, as Globalists like to say 'well being', as well as by the global crisis. In that way, many people, and especially those from developed

countries, argue that the quality of living does not depend any more on GDP, i.e. that GDP cannot be the an adequate means for measuring the quality of living, especially if GDP is calculated at the national level. According to Stieglitz, measuring GDP can cause unclear and contradictory indicators to be produced.

Well being is an immeasurable parameter which is convenient to use and popular with the Globalists, because it encompasses GDP and those elements which are of non-material value. Human Development Index (HDI), established by the UN, may be a better parameter, which also emphasizes GDP. In addition, many other indicators, such as GPI, GINI, HEWI, ISEW can hardly be considered in absolute terms. So, in which way should we behave nowadays? Are we being taught to stop our own development on the bases of the elements on which it has been created so far and to create new 'economy' based on environment and values in large? Can we take seriously the invitations coming often from the Green movement to organize ourselves on the principles which were popular at the time of *Chinese communes*?

It is true that there are things in life that cannot be directly measured by the means of money? However, it is also true that money has become a unique parameter for measuring everything in the world. Money makes the world move. That is why money has such a prominent place in every economy. It is not considered to be just a unit of measure in short time. The confusion created by such interpretation on one hand, and the requirements of the developed world and, in our case, of the *European Commission* to harmonize our lives with their requirements, on the other, is of such nature that it is difficult, especially for a small country to deal with it.

We have witnessed several crises in the past decade, almost one crisis biannually. Two of them were financial crises, two were ecological ones, and all of them were caused by human activities. We live in the world where minority controls the wealth while one third of the world's population still lives in poverty.

Financial crisis has hit millions of people on this planet. What began as problem of individual banks in 1970 year became later a global crisis in the real time economy. Financial crisis is accompanied by the crisis in food prices, where the price index has recently reached its maximum level in history. It is the result of the rapid growth of prices, which is a direct result of the following factors: historically low prices which

cannot be kept at those levels any more, current technological level in production process, competitiveness when it comes to using the land for other purposes apart from food production, as well as the increase in the prices of water and fertilizers. Above all, global ecological crisis does not only affect the contemporary world, but threatens to endanger its future as well, where irreversible processes endanger the sustainability of our planet.

Confusion, related to the financial crisis, which is often referred to as economic crisis, is one of the biggest unknown issues nowadays. We have recently witnessed that, at least in Europe, the most progressive and stable countries in terms of the economic development, were Ireland, Iceland, Estonia, Greece, Spain and Finland. We are witnesses that in a short time, while many people still analyze and try to copy development models of those countries, some of them are actually facing bankruptcy while the others are entering deep economic crises. Not to mention recent fuss related to evaluation of credit ratings of European countries. How can one comprehend this and adapt to everything that surrounds us? Has the economy become capable of establishing mechanisms which can be used to control our development? Obviously not! Hardly any firm rules can exist at all when a significant part of mankind depends on money that is printed by others and when many things are controlled by institutions behind the scene.

We live in the world of the global economy. It is not just a theory any more, it has become a reality. However, many of those who should be very much aware of this fact seem to be ignoring it, either on purpose or accidentally. Most of the world economists, as well as political decision makers are still deeply in their sleep. Some of the states still do not manage to break their own ties with the past, where they were relying on the protectionism present in the strategic economic sectors, which reminds of an old English king who stood at the coast and forbade the high tide to come.

The economic models mainly ignored environmental management and natural resources management as well as problem of values. Nowadays, everyone is unclear how it was possible to allow in the first place over fishing, wood cutting as well as reckless endangerment of the environment. The existing system is, according to Herman Daly, ‘As dangerous to the world as a business being close to bankruptcy’.

In the economic development so far we have been having incorrect measurements of our resources and wealth, where the values of natural resources and natural capital were ignored, as well as their capacities to contribute to prosperity. By underestimating natural resources and undervaluing them, we encourage the loss of our own planet. We have been used, by increasing the exploitation of the biological resources of our planet at the extent of 30%, annually to practice unsustainable process.

Despite great progress during the long economic development period, our world nowadays is characterized by bigger disparities than it has been the case ever before. The poorest 40% of the world population make only 5% of the overall revenue, while 80% of the world population live in the countries in which such disparity becomes even more evident. In addition, the global economic revenue grows in an exponential manner, according to Giarini, and it reached, from around $ 12 trillions in 1980 year the level of almost $ 170 trillions in 2006 year.

Long term consequences have been overlooked in the economy, where constant focus has been made on short-term effects, while partial solutions to the integral problems have been fostered. General crisis cannot be resolved by either partial or *ad hoc* measures, which can be clearly seen from the case of the financial market which has grown so big and complicated that there is no single model to control it. By not taking into consideration the main causes, wrong policies are often followed, while addressing wrong issues at the wrong time and in the wrong place.

Much has changed since the beginning of the nineteenth century, when great economic thinkers created significant economic theories. Economy is not any more limited to one country nor is the world a mixture of independent and separate *nation states*, as those great economic thinkers used to argue. However, the knowledge presented by Smith, Ricardo, Hayek, Keynes and Friedman is widespread so that many economists, including some of the Nobel Prize winners, have been further developing the variations of those theories. Furthermore, they do not take into account the present state of affairs, but try instead to interpret the contemporary world through the lenses of previous and older interpretations. In that way, they focus on the overused and overrated economic models and theories which justify the principles supporting the success of ‘few’ over the ‘majority’, the ‘measurable’ over the ‘immeasurable’, and ‘internal’ over the ‘external’.

The economic world that Smyth, Ricardo and Keynes lived in is different from the one we live in at the beginning of the 21st century. No one of them could even have supposed what sort of effect technology would have on the information flow and the business world, types of businesses and the perception of the world that we live in. For example, in Ricardo's time, a pigeon was used to sent the message to London about Nelson's victory at Trafalgar. Along with the global economy, the technology played the most significant role in changing the geopolitical reality by transforming old nation states into the anachronism. Nowadays, many models are not applicable any more simply due to the fact that the time has not stopped because of those theories. It is unlikely that simple models to describe the economy can be found as various economic parameters and various economic units have to be taken into consideration. It is evident, as argued by Giarini, Stieglitz, New Economic Foundation and the others, that there is a demand for a brand new theory which would, unlike the present ones, enable the maximum economic security, wealth and fair treatment for all, and, what is the most important, a secure future for our planet.

The relation between the economy and sustainable development is another story. Everyone wants to be a part of the sustainable development. The sustainable development was originally defined by Brundtland Commission. However, it is true that other definitions followed. Paul Collier, whose logic is firmly supported by the world most developed country's administration, argues that sustainable development is everything that is beneficial for the next generations. This is, generally speaking, true. However, does this mean that we have the right, enough knowledge and responsibility to be those who will, at this moment, decide on the future of the next generations? Does this mean that we are entitled to consume everything now, and this especially refers to the nonrenewable energy sources as well as other natural resources, while pretending that we are doing this in the best interest of the future generations? This is a very provocative interpretation of the sustainable development, but, unfortunately, a very realistic one as many of the most developed countries in the world actually apply it in practice. Equally important is the issue whether all on the Planet want to live in sustainable development, at least for the present. Some of the countries are decisively against this. They claim that they can apply sustainable development only when they reach the economic and social development level of the developed countries and when they eradicate poverty. Under such circumstances, one has to ask the following question: 'Do we need sustainable development at all and what kind of

economic development should we pursue?' Is the better answer to look at values and environment in creating new economy?

Perhaps the best answer to all the questions related to the financial and economic crises is what Alan Grinspan's wrote in his extremely intriguing book 'Age of Turbulence : 'Dollar is our currency but your problem'. It is evident that this is not so simple issue, however it is true that knowledge and all the issues related to the economy had least influence the stock market activities.

The story about the confusion of the contemporary civilization goes on to many other areas, out of which the one related to energy is of the vital importance. I believe that the fact that we have been consuming cheap energy so far is being misused. Cheap energy is a prerequisite for any economic development, including the development of mankind. To claim that cheap energy has been utterly consumed means much more than just a simple transfer from one way of providing the energy to the other. In principle it makes poorer individuals, i.e. the overall society becomes poorer as well. Renewable sources are a separate issue. Such sources, from the technological point of view, are still at the level where generation of 1 kWh from them is much more expensive that generation of 1 kWh in a conventional manner. The best example to illustrate this can be biofuel. If we, for instance, want to tank all the cars in Europe with bio-fuel, with a very popular third generation of biofuels nowadays, we would need 450,000 trucks of forest waste daily. If we want to do the same thing in the USA, no land would be left to build cities on it, nor for cultivation. Therefore, it is obvious that, regardless of our wishes, it is impossible to provide, at moment, by renewables for such quantities. Equally dubious is the trend present in the car industry. I believe that everyone understands that provision of the electrical car engine does not necessarily mean that the problem shall be resolved. This, generally, represents only switching from one form of the finally energy to the other and not from one primary energy source to the other, or in best case having better efficiency.

Trade with carbon dioxide and gas emission has been given by God to those who dig their heads in sand. It will result in higher expenses for the population. The provisioned CO2 taxation, trade with the emission of GHG, will, in the best case scenario, only create new difficulties. Money cannot change the climate, cosmic radiation, the Sun's cycles, the Earth's orbit, ocean streams and movements of tectonic

plates. Trade with CO2 emission will make a few people richer but majority poorer. On one hand, it will create higher profits for some, while, on the other, it will create chaos resulting in closing of many businesses. Whatever is the environmentalists' belief in the influence that production process and energy consumption have on global warming, their pressure on politicians can only create social problems. Decrease in energy consumption per capita can only result in the decrease of the standard of living. This may result in social riots and instability of the governments. For the time being, the only efficient energy sources are hydro power, fossil fuels and, regardless the recent warnings from Japan, nuclear fission. Until the price of the energy obtained from alternative sources is significantly reduced and until the energy used for the establishment of the power plants is lower than the duration of the energy produced in them, it would be a political suicide to try to impose other energy sources onto the world communities.

Many people argue nowadays that energy usage will be reducing CO2 if we stop consuming and using the following items:

- Red meat;
- Imported goods coming from overseas;
- High consumption cars;
- Car or air travel for pleasure and leisure;
- Business trips and use video-conferences instead, and many more.

Many, especially extreme environmentalists, suggest that we should organize our lives in a way to provide for all of our needs in the local communities by using the predefined technologies bringing us, in modern way, back to the time of ¨Chinese medieval communities¨.

The cheap energy era may be gone, however, not due to the problems in supply and increased energy demand, but due to the movement of Green and other interest groups, as well as the political pressure which, usually, have nothing to do with science but with a mere wish to push the society into survival on unreliable and expensive energy. Renewable energy, although highly desirable, is sparse, expensive, and it will take decades of development until it starts to contribute significantly to our demand. It should be noted that cheap energy is essential for every country and every economy.

With the lack of energy or merely with an expensive one, we will simply become poorer. Many of the things that we consider natural today may become unavailable in the future. All of this confusions often result in not doing anything in energy sector while waiting for the proper answers.

However, what we are most interested in here is the extent to which science contributes to all the confusions and other related issues of the contemporary world.

Let us recall the fact that, by definition, science is firmly associated with the facts gathered in the processes of observation, measuring and experimenting. Since the facts can be questioned, scientists discuss the methods used, accuracy, diversity and repeatability of the data gathered. If the data can be valued correctly, then, as Aristotle claimed: 'We first look for the facts and only then for explanations'! Explanations are called scientific theories, which can either be rejected or modified. Scientific hypotheses become invalid if there is a single opposite fact, regardless of the number of facts which support the hypothesis in question. However, science is evolving in a way that it rejects both theories and hypotheses and offers new explanations for valid facts.

Many scientists are, essentially, anarchists. This means that in their work they do not take into consideration the opinion of any authority in the field, but come to their own conclusions based on the presented facts. Hence, whenever new facts arise, those conclusions change. Science is not dogmatic and no phenomenon wich interpretations are set in stone. Scientific facts are independent of any politics, ideology, religion, popular paradigms, common views, ethic, morale or culture. To present this in simple terms, regardless of the fact if one comes from China, Australia, Chad, Montenegro or Spain, scientific measurements have proved that the speed of light is 299,792.5 km/second. It has the same value, whether it's a day or a night. However, it is also true that science exists along with the fact that all of us interpret things differently or, as Talmud argued: 'We do not see things as they are but as we are'.

At the time when science was born, a consensus was reached on religious and political grounds, as well as on prgedies, mysticism and personal authority. However, scientific issues cannot be defined by authorities or consensus. An appeal to reach consensus in science, however, is an old story. Starting from Galileo up to Newton and

nowdays, throughout centuries, science argued against reaching consensus by applying experiments, measurements, calculations, observations and renewed evaluation instead. Methods used in science enable correct resolution of problems; however, it happens sometimes that scientific consensus is reached under political pressure. It seems that an example illustrating this argument is the science on the global warming, where a consensus has been reached among the environmentalists, which is clearly designed to support certain political opinions. Namely, it seems that once authoritative institutions support certain consensus, there is no more space for real science. In that way, unfortunately, science becomes a mere system of beliefs supported by authorities and a consensus. Therefore, although Mann's 'hockey stick' is based on the unreliable and inadequate statistical methods used, it does not matter any more as the consensus about it still exists. Most of those who are against common consensus have spent all their lives working in science and do not care any more about the funds from which scientific research is supported. In line with this, Nazick stated: 'Science is objective, values are not, so that they have nothing to do with science', while Tom Paine said: 'Facts are more superior to reasoning and ideology'. Skepticism is a basis of science. Until dogmas and orthodox beliefs become challenges, one is stuck in the world of pregedies and authoritative behavior. 'Suppressing opposite ideas is much more dangerous for a humankind than global warming is', Vaclav Klaus said.

Fifty to one hundred years ago, great scientific breakthroughs were common. It is not the case anymore. Today's system of the research funds would not have financed the work of James Watson, Richard Feynman, John Salk, Charles Darwin, Albert Einstein or Marie Curie. No scientific journal would, nowadays, publish the article submitted by an unknown patent officer on a fundamental, utterly new, concept of physics. Moreover, in the system of contemporary scientific grants, those who hold firm positions are in fact those who evaluate scientific papers and applications for scientific funds. To that extent, it is very interesting to analyze the way in which scientific research in, for instance, solar physics, astronomy or tectonic movements, if financed by individual companies may produce different results to those produced by the research funded by the governments and various government's funds. Regardless of the money source, they are no right or left cosmic rays and radiation, nor free or bound tectonic plates. They do not recognize any ideology. They do not care who performs the research or where, they either hit the Earth or constantly more within it.

It is obvious that never before in history has a scientific integrity been more tempted, being under pressure due to the corruption in science, industry, politics and various interest groups. Don Johnson, the founder of a scientific integrity, used to believe that: 'Everyone who does not accept proved evolution scenario that existed at the time of his/her scientific education is of the same mind as one who believes that the Earth is a flat plane!' It was science and not religion that caused disbelief within attempts to explain inconsistencies in nature. It took great efforts to accept variety of natural causes, which required a response from the scientists that there was not a known common scientific ground, i.e. consensus in science. Scientific integrity should be established in a way that ideas which cannot be checked with any of the methods as well as falsed should not be considered parts of science. Scientific conclusions are always accompanied by some kind of uncertainty. Science is never absolute in proving something. For example, the fact is that our planet is 4.5 billion years old and that our universe was created in a unique event (Big Bang) 14 billion years earlier. It is also fact that organisms, as we know them today, evolved from a common organism that existed in the past and that 30 000 years ago, for unknown reasons, Homo Neanderthalensis become extinct from our area while Homo sapiens survived. Although those facts are universally accepted, anyone who proves them false would experience great honor. However, if one said that society had to stand at a halt until scientists presented absolutely provable data, it would be the same as if we said that no one should ever do anything.

Science cannot be considered special only because it may lead to unwanted and dangerous conclusions, but because it is often associated with those in power who use that power as social weapon. In that way, instead of having science and scientific facts important tools for achieving common democratic debate on policies and reforms, they are often considered as tools serving those who are in power. In many cases, this is shockingly evident. The cases of various gatherings and groupings, various pressures made, as well as financial corruption make certain scientists a political machinery rather than part of the society which is determined to argue for scientific truth. Critic of science has gone so far that it is stated that, from the epistemological point of view, scientific knowledge cannot be treated separately from other knowledge when it comes to the objectivity and reliability, which means that science can only contribute to the societal culture in similar ways as other cultural categories do, such as myth and religion.

Beyond everything mentioned, ‘science wars’ is very present, although many do not feel like discussing it. This war was initiated during the 90-ies as a series of intellectual ‘battles’ between the realistic scientists on one hand, and postmodern critics of the scientific theories on the other. Postmodernists questioned scientific objectivity by criticizing at large scientific methods and scientific knowledge in many areas, with special emphasis on cultural studies, cultural anthropology, women’s studies, comparative literature, media studies and science and technology studies. On the other hand, scientific realists accused postmodern critics of not being familiar with the science they criticized. It is important to keep in mind that most of those who criticize science and participate in the ‘Science Wars’ wish to become identified as members of post-structuralisms. In short, their criticism is brought down to claims that science essentially is not what we perceive it to be, as all knowledge as we know it is nothing more but a mere social construction.

The attack on the value of science made by the representatives of social sciences and humanities worried everyone in the scientific society, especially when the group which stood for an alternative scientific paradigm established the language of *social construction*. Many scientists understood this as a tendency to establish political control over science in the society calling this *creative science* or *intelligent design*. Prominent Paul R. Gross and Norman Levitt criticized postmodernist critics by arguing that those critics knew little about scientific theories which they criticized and that they used weak arguments solely for political purposes.

In the book ‘Beyond the Science Wars’ Ullica Segerstrale presents numerous facts about this topic. In that way, the author explains in detail how a famous case ‘Sokal Affair’ happened by publishing the article ‘Transgressing the Boundaries: Towards a Transformative Hermeneutics of Quantum Gravity’ in the journal ‘Social Text’. The article in question linked recent achievements in quantum gravity with the content of future postmodern and liberal society. At the same time, in another journal ‘Lingua Franca’, Sokal stated that all of that was just a hoax by which he wanted to investigate whether a journal would publish his text as an original article. He managed to prove it. The editor published the article in question. This case has attracted a lot of interest, not only among scientists but also those who were skeptic about science. As such, it made to the cover page of the New York Times. Today, Sokal’s hoax can be interpreted in various ways. For some people, it represents the relation between

two cultures and the way they communicate: social and natural sciences. In addition, Sokal's hoax showed to the physicists what could be published in a journal for social sciences/humanities and that those who were critical about the scientific achievements were not familiar with their content. Perhaps, it only showed that natural sciences were harder to understand than social/humanities ones. He personally explained this hoax as an experiment by which he 'tested intellectual standard' of certain academic sub-structures, or, as he wrote: 'The experiment showed that certain modern sectors of the American academic society became lazy'.

'Science Wars' can be explained in simple terms as a conflict between two opposed scientific concepts, which resulted in two different conceptions about the role that science should have in the society in relation to the political situation, as well as about potential consensus about scientific and political facts. It seems that Karl Manheim was right when he wrote: 'Natural sciences are exception to the rule that knowledge is influenced by ideology.' Am I wrong if I say that such influence is widely practiced, and not only in the countries in transition but in the others as well?

To have the science analyzed by non scientific community is neither a new concept nor a new phenomenon. Philosophy and sociology of science, together with famous Robert Marton, go a long way back in history. What used to irritate scientists was in fact tendency to analyze scientific content from the social point of view along with analyzing its level of organization. New field, known as *Sociology* of *Scientific Knowledge*, appeared in the early seventies of the past century. One of the principles that it was based on was a dogma to have simultaneously analyzed both scientific truth and scientific lies. Scientists understood that as undesirable perspective. In a way it meant ignoring scientific facts while constructing scientific conclusions, along with taking into consideration social perspective in that process. That represented an attack onto the things scientists appreciate the most. That is why scientists want to say that science is contaminated by social factors.

The crucial issue that imposes itself is to which extent, if at all, we can rely on the interpretation of scientific facts that are presented to us today, usually by non-scientist. Could an answer to this question be the statement of Newt Gingrich: 'Perhaps no anti-scientific argument today is as dangerous as the demands made by radical environmentalists and similar interest groups'. And those demands are

numerous nowadays. Therefore, death danger that we are facing in a short term is not global warming, lack of energy, financial crisis and similar, but political response and interpretation of scientific results made under pressure of the interest groups, as well as prosecution of those who have opposed opinion. Such policies represent a threat to the independent nature of science and to the religion so that it is uncertain where they will lead us and what sort of civilization they want to create.

Perhaps the easiest way to conclude this speech of mine on the confusions of the contemporary world would be to use Shakespeare's metaphor: 'All the world is a stage, and all the men and women merely players' which in the contemporary world is not any more metaphor but a reality in which the only uncertain issue is who the director is of the play. Certainly, they are not those who are on the stage.

Discurso de contestación del académico de número

EXCMO. SR. DR. D. LORENZO GASCÓN

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Excmo. Sr, Presidente,
Excmos. e Ilmos. Señores
Señoras y Señores,

Ante todo deseo dar las gracias al Presidente de esta Real Institución Excmo. Sr. Dr. D. Jaime Gil Aluja por haberme concedido el honor de responder en nombre de los miembros de esta Real Corporación al discurso de ingreso del nuevo Académico Ilmo. Sr. Dr. D. Momir Đurović

Hoy es un día importante para la Real Academia de Ciencias Económicas y Financieras de España. Lo es porque ingresa un nuevo Académico. Y se enriquece con ello.

La continuidad y la fuerza de una Institución como la nuestra queda asegurada con la cooptación, por la decisión, libre e independiente, del Pleno, de captar a personalidades del mundo científico que por su valer y prestigio fortalecen el acervo de esta Real Corporación.

Quiero recordar a los asistentes a esta solemne sesión que esta Real Academia cuenta, en estos momentos con tres miembros distinguidos con el Premio Nobel de Economía y a otros dos, electos, que leerán su discurso de ingreso en el curso del presente año,

Dudo que haya otra Institución con fines similares a los de la nuestra que tenga cinco Académicos en su claustro que hayan sido galardonados con el Nobel.

El Dr. Momir Đurović nuevo Académico correspondiente para la República de Montenegro, cuenta con una educación y una hoja de vida realmente remarcables.

Me limitaré a una síntesis de su extenso y brillante currículum vitae.

- Cursó el bachillerato en Sarajevo.
- Se licenció en Ingeniería en la Universidad de Belgrado.
- Durante cuatro años estudió en Londres. De 1970 a 1973 en el Imperial College of Science and Technology.

- En 1974 se doctoró en la Universidad de Londres.
- En 1979 se doctoró en la Universidad de Zagreb.
- Es Doctor Honoris Causa por la Universidad de la República de Moldavia.
- Inició su carrera profesional y docente en el departamento de investigación y desarrollo de "Elektroprivreda Crne Gora".
- De 1974 a 1979 fue Profesor Docente en la Universidad de Montenegro y Profesor Asociado de 1979 a 1983.
- Es Catedrático de dicha Universidad de 1983 hasta ahora.
- Investigador del Hurvey Mudd College,EUA.
- Profesor visitante de la UCLA, Los Angeles, EUA
- Jefe de Departamento en la Universidad de Belgrado y posteriormente en la
- Universidad de Podgorica.
- Primer Decano de la Facultad de Ingeniería Eléctrica en Podgorica, Universidad de Montenegro.
- Presidente de la Academia de Ciencias y Artes de Montenegro desde el año 2002.
- Presidente del Consejo Interacadémico de las Academias Nacionales SEE.
- Decano del Departamento VI de la Academia de Ciencias y Artes de Salzburg.
- Laureado de Oro de la Academia de Ingeniería de Moscú
- Miembro de la Academia de Ciencias y Artes de Bosnia Herzegovina.
- Académico correspondiente de la Academia Rumana.
- Miembro Asociado del Club de Roma.
- Está en posesión de numerosas condecoraciones y distinciones.
- Ha participado frecuentemente en proyectos internacionales de investigación y ha sido consultor de grandes compañías multinacionales como por ejemplo Westinghouse, Pittsburg, EUA y GEC Alsthon, Francia y de Gobiernos extranjeros, como el Ministerio de Energía de la República de China Etc., etc.

El Dr. Momir Đurović ha luchado y lucha por enaltecer y extender el prestigio de la Academia de Ciencias y Artes de Montenegro que preside en un marco de total independencia en el ámbito científico. Y ello no es siempre fácil en su país

La pretensión de una parte del mundo político de CRNA GORA es que los académicos, en lugar de ser nombrados por cooptación –como es el caso de la mayoría de las Academias del mundo- lo sean por el Parlamento a propuesta del Gobierno.

Es decir con la ingerencia de la clase política y en detrimento de la comunidad científica.

Sea dicho de paso, en el mes de diciembre del 2011, el Excmo. Sr. Presidente de nuestra Real Academia, y yo mismo, en sendas y separadas cartas nos dirigimos al Ministro de Ciencia y al Presidente del Parlamento de la República de Montenegro reclamando que se abandonara el proyecto y se mantuviese el estatuto de independencia que debe regir el quehacer de las instituciones académicas.

En fecha 7 de Diciembre el Ministro nos respondió en cumplidos escritos en los que nos manifestaba que se tendrían en cuenta nuestras alegaciones.

Los Đurović son una distinguida familia de intelectuales. En este apartado de mi discurso que implica el "laudatio" ya he glosado su acervo académico. Pero quisiera añadir que su esposa es licenciada en ciencias físicas y químicas y particularmente activa en el campo de la ecología; una de sus hijas es doctora en ingeniería eléctrica y está adscrita a la Universidad Mediterránea; otra es licenciada en derecho y su hijo cursa el doctorado en la Universidad de Manchester.

Pocas familias en su país podrían ostentar una concentración de saber como la del Dr. Đurović.

Quisiera agregar, asimismo, mi percepción de que sus años de estancia en las Universidades del Reino Unido han marcado su personalidad e idiosincrasia.

"El mundo tal como lo siento". Este es el título que ha escogido el recipiendario para su discurso de ingreso.

A fe que el nuevo Académico ha meditado y trabajado el tema a fondo. Contraponiendo opiniones y corrientes ideológicas. Abriendo grandes interrogantes, sin atreverse o no sabiendo como cerrarlos o darles respuestas. Porque quizás la respuesta no está clara o no existe.

Este teatro, que es el mundo, globalizado, guste o no guste, está lleno de controversias y confusiones.

Una de las mayores es la del cambio climático. Mientras se está tratando de demostrar que los últimos cambios climáticos y los cambios del tiempo son el resultado de las actividades humanas, otros creen que estas tienen una influencia insignificante.

Numerosas instituciones claman aduciendo que el ser humano es el responsable del cambio de clima de la Tierra.

James Hansen, uno de los científicos más importantes de la NASA, avisa que si queremos evitar el desastre, la sociedad global tiene nueve o diez años para ponerse de acuerdo en reducir las emisiones de carbono y el denominado efecto "green house". Martín Rees, ex -Presidente de la Royal Society nos da cincuenta años. La Universidad de Postdam, sólo veinte y Hawkins se inclina por otros cien años.

Ni en Copenhagen, ni en Taijin, Durham o Cancún se ha podido llegar a acuerdos. La obsesión por las emisiones de CO_2 sigue aquí.

Paralelamente, los adelantos científicos en la arqueología y en la investigación histórica interpretan que el período comprendido entre los años 900 y 1300 de nuestra era, la temperatura era varios grados más alta que la actual. Y que entre el 1280 y el 1850 hubo una época casi glacial. Y no había industria.

Los detractores de los que acusan la acción del hombre como único causante del cambio climático arguyen que en la Tierra y en el espacio hay procesos naturales como la actividad de la energía magnética del Sol, la energía cósmica, las dislocaciones y movimientos de las placas tectónicas y que en realidad vamos a entrar en un período de frío.

Y en todo ello, nada tiene que ver el CO2. La confusión está servida.

Todo ello aderezado por la corrupción científica. Un programador informático ha descubierto recientemente que el Godard Science Institute de la NASA y el Climatic Data Center de North Carolina habían reducido el número de sus estaciones meteorológicas de 6000 a 1500 porque sus mediciones mostraban que las temperaturas bajaban, lo que estaba en contraposición con la defensa y el deseo generalizados de que son más altas que antes.

Otra de las grandes confusiones es la de las crisis económicas y financieras.

A menudo, inconscientemente, se buscan respuestas en los sistemas y pensamiento de los grandes economistas de los siglos pasados. El pensamiento de Adam Smith, Ricardo, Hayek, Keynes y Friedman. Pero su mundo era muy diferente del que vivimos en el siglo XXI. Vivían en el marco de los estados-naciones.

Ninguno de ellos podía imaginar el efecto tecnológico y el flujo de la información en el mundo de los negocios ni en la percepción del mundo en que vivimos.

Nos ha citado el ejemplo de que en los tiempos de Ricardo se envió una paloma mensajera a Londres para informar de la victoria de Nelson en Trafalgar.

Nos ha descrito, asimismo, las contradicciones generadas entre la economía y el desarrollo sostenible.

La problemática de la energía barata, la relación de las fuentes de energía convencionales y las nuevas y renovables. Y así sucesivamente.

Pero lo que más interesa al nuevo Académico es el papel de la ciencia en la sociedad moderna.

Así que hoy, el principal problema no es el cambio climático, las crisis económicas o la energía sino el uso o mal uso de los logros científicos en la función de los grupos de intereses que quieren gobernar el mundo.

Con claridad y coraje, el doctor Đurović plantea la cuestión de si es que vivimos en un entorno en que diversos grupos como son la Comisión Trilateral, el Grupo Bilderberg, el Consejo de Asuntos Exteriores, el Instituto Real de Asuntos Internacionales, las agencias internacionales de calificación Moody's, Standard and Poor, Fitch, el Banco Goldman Sachs y similares están gobernando nuestras vidas mediante la manipulación de los ciudadanos, los gobiernos, los medios de comunicación, y, en particular, los datos científicos.

Y ha terminado citando a Shakespeare: "All the world is a stage, and all the men and women merely players".

Lo que hay que discernir es quien es el director. Desde luego, no los actores que están en el escenario.

Se trata de un discurso profundo, provocador y que invita a reflexionar y a estimular la acción.

Hay que dar las gracias al doctor Đurović por su contribución, felicitarlo en nombre propio y en el de la Real Academia, y dar la enhorabuena, también, a nuestra Real Corporación por haber tenido el acierto de elegirlo para incorporarse a nuestras tareas.