

## What the Romanian government must know and do about scientific research

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Traditionally, the scientific research in Romania was carried out in scientific research institutes. Beginning with the 50's these institutes were set up by science personalities acknowledged as such by the communist regime. The scientific research performed in these institutes was focused on nature sciences (physics, chemistry), engineering sciences (electronics, telecommunications, constructions, materials), life sciences (biology, medicine, agriculture, zootechny), mathematics. In time, these institutes developed a remarkable expertise and obtained outstanding results both in theoretical and applied research. A notable example in this respect is provided by the physics research performed in Magurele Campus, Bucharest, that succeeded in achieving a worldwide recognition. The research carried out in Magurele held a position of international pre-eminence in electronic computers, lasers, nuclear electronics of command & control. Chemistry, engineering, mathematics recorded, back then, similar successes as well.

These successes stem from a few organizational principles put into operation by the former communist regime. At first, a great consideration was devoted to science education at all levels, ensuring a high professional training and a rigorous selection of cadres. In the second place, the research institutes benefited from a budgetary, institutional financing, at a reasonable social level, including salaries, investments, expenditures allotted for equipment, material and documentation, running expenditure. Third, the propagandistic, ideological and political inferences were maintained at a controllable level and the professionalism was to the fore.

In the last years of the communist regime, this state of affairs kept deteriorating, so that, after the 1990's, the scientific research was subject to a programmatic and systematic destruction.

A first step after the 90's was the suppression of the professional rigor in science education. Thereafter, the Romanian scientific research was infested with large masses of impostors displacing the professionals. Characters with no professional training whatsoever succeeded to climb the scientific hierarchies overnight and to suddenly and brutally reach the highest levels. These impostors whose knowledge and background were devoid of credit, spontaneously set up solely for political considerations, a huge number of universities, the research system of the Romanian Academy and reformed the so-called research departmental institutes. Nowadays, the universities have hundred of alleged research centres, comprising, most likely, about 3000 persons. The Romanian Academy has approximately 60 institutes of the so-called scientific research with bizarre scopes such as "life quality", "totalitarianism", "socio-humanities" etc. in which about 3000 people are engaged. At the same time, politically supported career hunters broke the former research institutes into many, many small ones, all named "national institutes", at the helm of which they became directors - or managers, as they modestly like to call themselves. Many other research institutes were dissolved and their patrimony was robbed. From over 200 000 employees in the research system of the

communist regime, nowadays roughly 40 000 remain. Out of which only 5000 have a doctoral degree. In physics there are around 1500 researchers left. From the former research institutes probably remained around 15 000 employees. No one can provide a clear-cut explanation as to what the remainder up to 40 000 represents. This kind of figures are virtually a state secret and when they are made public, which seldom happens, they are mystified.

The final coup de grâce delivered to the scientific research carried out in the former research institutes was the introduction of the project-based financing scheme. This type of financing allows not only for minor expenditures, as expected, but also for major ones, including salaries which, according to a Government Decision (no. 475/2007) can amount, quite excessively, to 4000 euro/month. Furthermore, the legislation on the salary scheme in Romanian research system permits cumulative salaries, with no limit whatsoever. Moreover, as distinct from national institutes, the departmental, academic and university research benefit from both institutional and project-based financing. Consequently, where scientific research is concerned, Romania is a country with two systems, akin to China.

As long as there are these so-called research projects, no one in research does or will do scientific research anymore, since everyone is busy running after this big money. The execution reports of the projects are nothing but blatant compilations lacking any trace of originality, mere plagiarisms, highly fanciful and utterly bizarre mystifications. Along the time, these projects have financed so-called researches with aberrant scopes, such as “menopause in rats”, “funeral stones in Bellu Cemetery”, “the sculpture stone”, “virtual space for learning the European terminology” and recently “virtual platform for people with mental disorders” (in other words, they bought computers for the mentally insane patients in the Psychiatric Hospital No.9, in Bucharest). In the Romanian scientific research system, a high school graduate within the technical personnel has a net salary (in hand) of about 10-12 mil. ROL /month (approx. 300 euro/month), a senior researcher 1st class has around 40 mil./ month (about 1000 euro/month) while directors, managers, project directors and project leaders reach salaries up to 200-400 mil./month (approx. 5.500 – 11.000 euro/month); what is more, such managers often have inferior scientific degrees, their only merit is the “winning” of projects through “competition”; this situation opens widely the door to false values, to inversion of values. It is to be presumed that a doctor in science or a senior researcher 1st class have done some serious work to obtain their scientific and professional degrees. And yet, if they “win” projects they get their salaries, if they don’t, they get nothing; salaries will be paid to those who “win” projects, despite their inferior scientific or professional degrees. This situation is a serious transgression of the right to work, and generally, of human rights. A generalized corruption pervaded the scientific research through this sinister project-based financing mechanism, a mechanism that, nowadays, sets the present Romania apart and astray, both geographically and historically.

All these organizational and administrative perversions are supported by a sordid propaganda - rife with all sort of sophistic theorizations, one more aberrant than the other, assigning absolutely improper terms to the scientific research, such as ISI evaluation (Thomson-Institute of Scientific Information), technological transfer, production, visibility, competitiveness etc., etc. Furthermore, Romania allots important funds and pays substantial contributions (whose quantum is a another “state secret”) to various research institutions, such as UE, CERN-Geneva, Dubna-Russia, etc., for the sole and only purpose to pay a political clientele with velleities of international research leaders, to politically manufacture and confect so-called research managers and provide them legitimacy - which is false, anyway, characters who, anyhow, prove themselves to be fully and absolutely incapable. This mass of manoeuvre, benefiting almost exclusively of research projects, is particularly useful for the political employees to rob the public money. The employees in the Romanian research system set up cartels made up of false research leaders in order to siphon off

the funds – through contracts, tenders etc.- from the public budget into their own pockets. And all these onerous businesses are made under the permissive eye of the public bodies in charge of Fiscal Administration and Financial Controls or, perhaps, in connivance with them. The scientific research in Romania becomes a front for systematically and dedicatedly robbing the public money.

What can be done to put an end this disaster?

1. First, many universities with no scientific merit must be dissolved or at least demoted to local colleges. There is nothing wrong in having a great number of universities; on the contrary, our young need the light of knowledge, culture, civilization, they need a sound professional training. But, better no university than a false one. Because this kind of universities cause much harm by spreading unculturedness, ignorance, corruption, by teaching the young that rigorous study is no longer necessary since they can always buy a diploma and don't have to earn it through hard and serious work. Such universities are destroying the Romanian society, therefore they must be immediately shut down.

2. University research must be separated from university education. The scientific research performed in universities is a positive thing on condition that it should not be mistaken for education. A person cannot be a researcher and a professor at the same time. A professor can hold classes for one year without doing research in this time or, he can do research several years without holding classes during this period. It's true that there are many voices, especially in Western countries, advocating this noxious combination. But Western countries are not a paradigm of success in all matters so that we should unconditionally follow their lead – this is on one hand. On the other hand, Western countries have a certain and not honourable motivation to pursue such a policy. The situation of university research and education both in the USA and Europe, far from being perfect, is, similar to that in Romania, continuously deteriorating along the same lines as in our country and along different lines as well. That is why we should not consider studying abroad as an absolute best. However, how is it that the results obtained by these countries in research and education seem somehow better than those of Romania? First, this is not an absolutely and uniformly valid truth. Second, these countries still have a very strong tradition in this respect. Moreover, the research and education in these countries are carried out by people who are still very motivated, originating from other civilizations (Chinese, Coreens, Indians etc ). Finally, their financial corruption is held under some degree of control.

3. A lot of institutes, centers of the Romanian Academy must be dissolved. They cannot provide a clear definition in support of the legitimacy of their object of activity. Let's consider the fictitious example of a „research institute of the theory of revolution”. This research area does not have a history of its own, it is not historically constituted as a scientific research field; it does not have principles, method, findings, founding fathers; it does not have a Newton. It may have a Marx, but regardless of how interesting Marx might be, he cannot share with us too many scientific things, namely things that can be tested and possibly verifiable. Besides, could someone be really interested in a revolution that is conducted scientifically? If so, anything - including the pursuing of any vested interest, can be named „research”; within a certain amount of „reasonable absurdity”, we can say that even a cat does research when sniffing out the surroundings in search of food. But, common decency and limits suggest us that this could not be exactly called “research”.

4. The departmental research must also be purged. At present, it has virtually a secret status, no one can say what it represents, what exactly is the activity of the remainder resulting from the difference between the aforementioned 40 000 employees in research and the 15 000 employees of the former research institutes. This is another enigma for Romania.

5. A single salary scheme at national level must be instituted, applicable both in research and education, according to professional or scientific degrees and with a reasonable difference between

the minimum and maximum salary. A particular attention must be paid to the positions of the so-called research managers who shall be remunerated in line with the aforementioned salary scheme, supplemented with a fractionary management allowance. When their incomes will be substantially diminished, many of them will relinquish their managerial positions; thus, the professionals will stand a good chance of coming to the fore.

6. The multiple office holding (even if it's just on paper) that blocks the filling of vacancies must be strictly forbidden. There are, for instance, education inspectors who maintain their teaching positions, heads of clinic who maintain their university chairs, academicians who are both researchers in many institutes and professors in many universities so that the overall amount they receive from these offices, is supplemented with the emolument from Academy and, in many cases, with their retirement pension. This despicable conduct is most dishonourable for them and they must not be allowed to persist in it. The employees in research who were laid off will then be able to fill the positions left vacant after the departure of these rapacious characters. I mean no offence, but the first on the list is the Minister of Research and Education who is also – at the same time - a deputy, rector, professor and researcher, chairperson in all sorts of commissions and committees (though he (she) does not derive a financial benefit from all positions; that would have cap it all!). This practice of holding multiple offices is nefarious not only from financial viewpoint but particularly where the traffic of influence is concerned. Anyway, who carries a stack of personal cash nowadays? A credit card is a lot more easier and powerful!

7. The scientific research (cleaned up of all “impurities”) must be financed exclusively from the state budget, in an institutional manner, so that it should cover the salaries, running expenditure as well as the expenditure earmarked for equipment and investments on the basis of annual planning that is approved following verifications and assessments. When Romania will have economic agents sufficiently interested in the scientific research then we could also have a private research. The project-based system must be abolished. The projects must be awarded only to young researchers who want to work in a research institute; thus, they will be able to cover, for a limited period of time, their necessary expenditure for pursuing a mastership, a doctorate or a specialization, as it is everywhere in the world. Consequently, the research institutes will have the possibility to make a selection of their future staff. The Government Decision (475/ 2007) that provides for a salary of 4000 euro must be annulled.

8. The government decisions on the establishment of research institutes must be reviewed. Under these normative acts, the research institutes are, on one hand, legal entities of private law; on the other hand, they are under the coordination of a governmental agency (actually, this is a subordination) similar to public institutions. The agency appoints the director who will subsequently behave, according to the prerogatives guaranteed by law, like a patron (but on public money) of the respective research institute; moreover, he has a (remunerated!) board of directors like any other public institution. Such normative acts are not only a mockery of democracy but also a guarantee of corruption. In addition, according to the financial-accounting legislation in force, the scientific research is considered “public service” (such as, for instance, hygiene services like barbering, hairdressing etc); consequently the financing is done in a post calculation system or, more precisely, the payment is made after the service was rendered, “if the client is satisfied” – much like the payment “policy” of those establishments with red light at the entrance. It is hard to imagine a more humiliating situation for this poor Romanian scientific research! When the institutional financing will be applied, this provision of the accounting law becomes otiose. The research institutes cannot be treated as economic agents because the huge bureaucracy associated to this status suffocates them, impeding the smooth and normal running of their activity. Furthermore, since the genuine scientific research does not have an outlet, does not produce saleable products and does not make money, it needs a lot of papers, acts, approvals, etc. in order to be

treated in terms of economic agents. In general, the financial and administrative system of the research must be drastically simplified. Perhaps, the pragmatic Anglo-Saxon example it is not exactly inappropriate in this respect. After negotiations, on the basis of the activity plan annually approved, a research institute has an open credit to a bank, the management of the institute runs the expenditure and is audited (viz. the activity plan is checked against the invoices and the actual expenditures) at the end of the year.

**9.** The ministry of research or, the governmental agency in charge of research, must supervise, through their offices (departments), the distinct allocation of funds for each research area: natural sciences, engineering sciences, life sciences, eventually social sciences. Since the natural sciences (especially physics) encompass a relatively large number of fields (subfields respectively), the attributions on the coordination of these sciences must be entrusted to a special institute, such as the former Institute of Atomic Physics.

**10.** Romania's financial contribution to the research of the European Union and to other international institutions must be stopped. The so-called assignment of competition-based projects within various EU framework programs has long proven itself to be a notorious international fake, generating corruption and being well-documented at European level. Briefly, the European Union promotes a minor research (5% from the European research budget) wrapped in a delirious verbosity which is an unquestionable evidence of a fake. Like all the other research institutes, the aims and objectives of the European Union do not concern the scientific research but the robbery of the citizens' money under the guise of research. Since the launch of the framework programmes, the European Union cannot provide at least one single concrete and valid result produced by its scientific research despite the aggressive propaganda and insistencies.

Of course, we cannot fondly imagine that all the above-mentioned measures will be applied, neither all of them, nor in the form presented here, nor in their spirit and even less in their letter. Of course, the interest group of research politicians will label them as naive, fanciful, inapplicable, superficial, frivolous, pathetic and impassioned, etc., etc. Of course, they will say, the research is but a cash cow and the researcher is someone who would better neither enter your house, nor be invited at your table, 'cause he lacks manners, he is – pardon the expression – a kind of surly boor. The groom is good at horses, the farmer at agriculture, the mason at houses, but, no offence, where research is concerned, we are the best at it, we, the research politicians. It is not true that we are impostors; no way! We are just extremely versed in lying, cheating and stealing, and the scientific research, by its elusive nature, provides us a large room for manoeuvre in the noble occupation of misleading it and snatching from its pockets. The Romanian democratic society accepts this state of affairs and the Romanian law (which, true enough, is our own make!) allows it. We are so skilful that, see? no one can lay a finger on us for we walk righteously the legal path of democracy.

Indeed, the aforementioned measures do not attack directly the heart of the problem, the impostors. They cannot be successfully, efficiently attacked. The disaster they caused, more specifically by their very existence, is largely irreparable. Who shall ever perform a high-quality teaching, who shall ever keep university courses of high scientific level? Who shall ever apply the aforementioned measures, who shall ever accept them and observe them in first place when solely the impostors are in power? Who shall ever overthrow them now - an earned right is an eternal right in Romania, who shall ever turn the wheel of history? Who shall ever re-evaluate all the university, scientific and professional degrees and take the titles away from these impostors? All these probing questions are good enough to see that a "theory" such as the aforementioned one is highly idealistic (although, who knows, perhaps is true that "the most practical thing in the world is a good theory"). We can only hope that a policy relatively pursued according to the said measures and sustained in time, might have a beneficial influence on the future generations who, let's hope,

will be aware of the necessity of the regeneration. In this process, time is most helpful, since it is the only one capable of throwing the impostors out of the scene of history. It can prepare the impostors' requiem.

Now, we finally come close to a problem that is, perhaps, the most delicate: what should the government, the society expect from the scientific research, what is scientific research good for, how should it be evaluated, what is the meaning of a scientific research that is socially organized and financed from public money, why should we keep financing it? The answers to such questions are obvious, it would be idle to repeat them here, but, after the '90s, the Romanian society seems to ask itself insistently such trivial questions especially by a great deal of agents of influence, who are extremely vocal and much hyped, as well as by a lot of dummies who confuse the place and create muddle and whose babblings the Romanian governments and politicians seem to pay much attention to. That is why a short and hopefully informed answer, would not be otiose, perhaps.

Scientific research originated in the western world, 3-4 centuries ago by the interest in nature. Back then it was called *Philosophia Naturalis*, now we call it physics, chemistry, mathematics. It was initially performed by solitary people and subsequently by academic societies and universities. The sole motive for pursuing this activity was a tremendous curiosity accompanied by a general philosophical conception on the world, divinity, destiny etc. It was financially supported either by the personal wealth or by kings, princes and later on by communes and society. The motive of the latter financing bodies was based on the belief that such an activity would bring education, training and a wise thinking to the young. During those centuries the scientific research produced the knowledge of mechanics, heat, thermodynamics, electricity, magnetism, optics, chemical substances, electronics, materials and nowadays knowledge of atomic and nuclear physics, etc. Meanwhile, it was noticed that mechanics is particularly useful in the art of waging wars, in the field of constructions, that heat theory and thermodynamics teach us how to harness the steam power, electricity, that magnetism teach us how to obtain energy, engines, illumination, heating, transports, long-distances communication etc. Today, our modern civilization is dominated by energy, electronics, materials with special properties, medicines etc. All these things have stemmed from the scientific research, although their invention was never the purpose of this research. Those who invented them were inventors, engineers who performed what we call today „applied research”, „applicative research” „oriented research”, „technological transfer”, etc., etc. By no means did they carry out that kind of scientific research termed nowadays „basic research”. Well, if this scientific research produced such results of an exceptional societal importance solely through indirect and mediated means, do you find it normal to ask it now to produce them directly? Is it not more normal to ask the scientific research to „produce” scientific results, as it has proved itself capable of doing, and to ask the engineering science and research to produce practical results, to demand the applied research to produce various other practical things such as medicines, materials, technologies, electronics, etc., etc?

During the last century, especially after the World War II, research institutes have been set up everywhere around the world. On this occasion, a current and influential line of reasoning, a paradigm, asserted that scientific research is fundamental and produces scientific results, it is then applied and applies these results and, finally, it is an economic and market research and produces technical and technological things which it sells and makes a profit. In time, this theory has been disproved. It happens quite often for the basic research to be inspired by applied research, by technology and vice versa. All these have taught us how difficult it is to ask the scientific research to produce something utterly precise, in economic terms; moreover, if we let the scientific research to freely follow its historically constituted nature it will provide us with many other useful things, even more inconceivable and more surprising. What precisely can we demand of an ongoing act of creation, of a new born child, of a quest that is developing, quite

true, according to rules and principles but different from those we have in mind when we formulate hard and fast economic requirements? The scientific research needs only a minimum cultivation to blossom and bear fruits, although no one knows exactly how it does that.

In a nutshell, the purpose of the scientific research is to produce, by its very nature, positive scientific knowledge namely knowledge with such a high degree of probability that can be considered as certain. Based on such knowledge, the applied sciences can yield practical and useful results for society. However, despite the constant interaction between science and technology, they are quite distinct from one another. Therefore we should ask the scientific research to yield scientific results and the applied research to produce practical ones.

Can we now consider the social spending on scientific research as useful, legitimate and rightful? The answer is obviously "yes, we can"; let's just take a look around us and we will notice how vulnerably reliant our society is on science and technology. Leaving aside that, unlike other social costs, those required for the scientific research are insignificant; everywhere around the world the research budget amounts to a 1-2 % of the GDP; sometimes it is even a fraction of a percent (as it is, for instance, in Romania: 0.2%; I wonder what's the trial balance error?) - in which case any discussion on the funds allotted to research becomes absolutely ludicrous. However, usually and normally, elsewhere abroad, the funds earmarked for the scientific research are not an object of debate. Only in Romania there is much talk on them, for the simple fact that here, the research budget is robbed and while at national level the amount of this robbery is not significant at a particular level it is quite substantial. Nevertheless, those who ramble on such topics are precisely the ones who did not manage to steal enough.

If we choose, however, not to be concerned with the research funding then we will certainly perish. The same upshot awaits us if we subject the scientific research to abuses and perversions and thus destroy it.

These gross improprieties against science, which are a common practise for many of us today, consist in demanding the scientific research something that it cannot provide, in treating it against its very nature, in misrepresenting, distorting and falsifying it through political and administrative measures buttressed by all sorts of sophistries (the Romanian puts it bluntly: "Let's mock it!"). They also consist in doing totally different things under the guise of scientific research, in asking for funds on its behalf and use them later for your own benefit.

There are many improper activities performed in the name of research and many improper demands addressed to it. Let's take for example the so-called "international visibility ". Big money is squandered in its name in Romania today. We should not fondly imagine that a scientific discovery, regardless of its novelty and importance, is embraced by the international community immediately and without demur, that its author becomes famous overnight and Romania, if the author is Romanian, becomes an everlasting star in the firmament of science and technology guiding all states of the world, much akin to the Polar Star. " A new scientific truth, said Planck, does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it". In general, fame must be earned not fabricated - the real, genuine fame of course. Obviously, we can make ourselves quite visible on the international arena, and not only on the scientific one, if we fritter away enough money on all the vocal characters and organizations which live by vocalising. Poor them, they are just trying to make a living. We pay and they sing to us, they tickle our ego. What else can be more typically of a Romanian boyar conduct? After all, we are the ones who roll out the luters! For instance, Romania pays a subscription of 3 million Euros a year to an European research institute; in exchange, this institute says and writes everywhere that Romania is one of its prominent members and the Romanian leaders involved in this approach (let's not

call it a „business ") are famous. And as good as gold! Moreover, if Romania takes out from its own pockets the necessary money to purchase, just for one of its institutes, a few thousands computers - of course, from the agreed upon European firms – at which European researchers are to allegedly work and to which „non-involved”, common Romanian researchers are denied the access, then we have set up an international „network” and we are, again, famous! Can this be called „scientific research”? Where are the scientific results? The only thing that the characters involved in such businesses can boast about, in their rare public speeches, is the money they successfully succeeded, once more, to extort from the Romanian government which gives them, once again, a graceful go-ahead. „They’ve tricked it once again”, they are „terrible at trickering”, these extortionists! Are these scientific researchers? Are these science leaders? Is this scientific research? Is this a government? Is this Romania?

Another improper demand is the so-called ISI evaluation which takes into account the number of scientific publications and the number of citations assigned to these publications. This kind of evaluation was, and continues to be, the main instrument for creating impostors in Romanian research. We remind that the outcome of the scientific research are the results and not the publications. The publications are just a means to convey these results, in which case they are welcomed; but if the number of publications is excessive, they turn into a falsifying method of and in science. Where could possibly be the scientific result in a series of routine, trivial, serial publications - with a long series of co-authors of international jumble (crowds stir up by the smell of money) - which are neither checked nor read according to nowadays common practice in research when the promotion in research is based on the number of publications? What’s the use of all these papers unceasingly scribbled, of all these magnetic bites scratched on the computer screen? If we are interested in the number of publications, we will always find a way of achieving it but then, undoubtedly, our energy will be channelled toward this number and not toward the scientific research or the scientific result. Paradoxically, a man gets always what he wished for. The same principle holds true also for citations. Generally, the citations are made when the result is wrong, incomplet or imperfect – this, in the case of proper citations; for there exist and are practised on a large scale the perfunctory citations, the dedicated citations for organizations, for coteries, for exclusive, underground secret societies – this are the improper citations. By the same token, we can get plenty of citations for ourselves, if this is what we want. But then, again, our aim will not be the scientific research for the simple reason that we shall be concerned with something else, namely with amassing citations. The Institute for Scientific Information (ISI) was set up in a desperate need to justify the research in the eyes of the general public, in a society that puts money above science, knowledge and wisdom. Instead of cultivating and educating the public, we prefer to buy its indulgence, quite true, with its own money. In time, ISI proved to be a highly lucrative business through the mistification introduced by it in the scientific research.

Therefore, we must formulate a final commandment:

**11.** The evaluation based on ISI criteria must, absolutely and completely, be abandoned; it must be replaced with one based on scientific results which can be performed only by the genuine professionals of the scientific research.

This is the most difficult thing to accomplish.

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