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## Neurasthenic Science

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The funding of scientific research declines everywhere today. People do not buy science now as they did before. In the past the scientific researchers were disguised as priests, philosophers, astrologers, alchemists, engineers, professors, and they were paid for that; the most fortunate were monks, and lived at the princes or communities expense. Technically speaking, all of these were illegal researchers, acting under cover. With the advent of the science factories - institutes of scientific research - their cover was withdrawn, their guise fell, and they were forced to declare their legitimate identity: that of scientific researchers. At that very same moment of time the question arose of what are they good for, what is their use, and what are they supposed to do for a living. The answer was that these people would further advance science, and that their scientific products and by-products would be useful to everyone. This answer was accepted, the scientists were trusted and financed, and they kept their promise: science produced the steam engine, the combustion engine, the movie industry, electric power, steel, plastics and modern materials, telecommunications (i.e. radio, telegraph, television, telephones), nuclear power, pharmaceuticals and cures for diseases, air and space flight, silicon and microelectronics (including sound and image devices), elegant wrist watches, computers and virtual reality. To say only a few. Scientists call all these science by-products, while laymen call them scientific (and technical) products. For scientists the product of science is knowledge, a point which usually escapes the awareness of laymen.

Now, the usefulness of science and scientists is questioned again. Science and scientists must be "accountable", and governmental acts concerning "performance and results" of scientific research are passed and enacted; scientists are required to devise "strategies and plans of research", to propose "research projects, programs and themes", which are to be "evaluated", approved or rejected, by "panels of experts", to submit their publications to "peer reviews", to "fight" a new war and play this foolish new game. For what? To make a modest living by an activity as generous as the scientific research is. Speaking of the "accountability" of science and scientists no one ever remembers the list of scientific products given above; and no one thinks of taxing transportation, telecommunications, energy, the sales of CDs and videotapes to support scientific research.

The scientists are no stupid guys, they are only too busy and too imaginative, so that, instead of challenging the accountants" regarding their own "accountability", they attempt to cope with the new situation by filling out "research receipts": add more motion, bits of music and image, a handful of computations, add many graphics to your scientific papers, use color transparencies in your oral presentations, cite everyone with influence, pay the page charges for your publications, submit thick, highly coloured reports, animated if possible; throw in a little Einstein, or at least a pinch of Feynman. Play the drum loudly, and dance on stage. Do it artistically. You will get

through the ordeal and win acceptance for your research concoction. But once accepted the foolish game is not over. You must produce reports on the project results; another round of cooking and baking, the same receipt again. All of your time, effort, and money are exhausted in proposing and reporting on research projects which never get accomplished in fact. Computer programs are widely in use, which write scientific papers automatically, by themselves: there is a list of options for the subject, a menu for the extent of treatment for each topic, another for citing the methods used, and, since the program is personalized, your and your collaborators names are put automatically on the authors line; another set of options generates the title of the paper. Serial papers are written and published in this way. More fruitful, a research program may involve the production of data banks, and then one may write and publish serial papers, each correcting the errors in the previous ones; more profitable, isnt it? All of this aberrant, serial production gets published, recording high scores in the reviews and evaluation processes, because money is at stake in this game, because money is the name of this game. If you make the mistake of being honest, and submit a valuable proposal for scientific research, it will be rejected, and the reviewers, turned authors, will take it, distort it, and submit it as their own proposal; the free electronic archives flourishing nowadays, where naïve researchers put their publications, feed the research proposals of reviewers turned authors. The game is tough, and whoever has scruples is lost. It is a manly game, though played by emasculated scientists. This is neurasthenic science.

There have appeared experts in evaluating the research output, there have been developed theories about theories, and we have scientific researchers that do scientific research about scientific research. There are experts on experts (i.e. metaexperts), and science of science of science. The scientific metamethods of metaevaluation of the metaoutput of this multi-metascience have expanded into monstrous and grotesque forms, which feed on themselves, in an erratic movement of virtual objects in an empty world, devoid of any sense. Obviously, this is nothing but the end of conducting scientific research in any proper way. This is the self-cancellation of scientific research.

The non-sensical, money-oriented, movement described above - neurasthenic science - breeds a new race of people; they live among, and on, scientists, but certainly outside of them; they deal with science-related matters, but certainly are outside of science. This gregarious and noisy bunch of beotians, of science activists, call themselves professors, projects managers, coordinators, conveners, moderators, chairpersons, supervisors, editors, reviewers, referees, but their deepest ambition is to be called "peers". A "peer" is a person who has an equal standing with another, and the "peers" wish to be equal with the scientists. Of course they are not, precisely because they call themselves "peers" and not scientists, on one hand; and on the other, the equality of two or more persons is an illusion, especially in science, such a relationship simply does not exist. Does anyone sufficiently sane think of Bohr as equal to Einstein? The scientists are a collection of distinct (and distinguished) persons.

The peers bunch made two main contributions to neurasthenic science: bibliometrics, or scientometrics, and peer review. Bibliometrics is a numerics of papers, citations, and other items, which are sometimes related accidentally to the substance of scientific research. The bibliometricians count all day long: they count how many papers an author has published, in how many journals, in how many ways; they count how many authors have published the same paper how many times; they count the authors addresses, affiliations, leaves of absence, acknowledgments, they count the number of references a paper has; how many paragraphs, figures, tables, equations and typographical characters are in a paper; they count words and key-words, phrases and key-phrases; they count many things, except themselves, because they are innumerable. After counting all these things they do numerics on the counts; i.e. they add, subtract, divide, multiply, exponentiate and take logarithms of these numbers, on computers, of course. Thereafter they draw conclusions,

establish criteria, give advice and forward reports of analysis. They approve and reject papers, research projects, and make science policy; in which case they are called science-policy makers. What sorts of conclusions do they draw? Well, conclusions like these: if a paper is long then it is a compilation, if a paper is short then it is a letter and therefore unsubstantial, if a paper has only a few references then it is plagiarized, if it has many references then it is forged, if it has many authors then divide by them, if it has one author then disregard him; if a paper is experimental it is not theoretical, if it is theoretical it is not mathematical, if it is mathematical it is not experimental, . The bibliometricians have a vague feeling that something is written there in a paper, but they refuse to know what, because everybody knows that knowledge is a poisoned apple. Numbers are safe. The bibliometricians count authors citations: how many, where, when, by whom, why, are not they counterfeited? And they apply their statistical numerics to these citations, i.e. weight them. The bibliometricians measure science and they are thereby scientometricians, because they are doing scientometry and scientometrics. A ship stranded once on an isolated island in the Pacific Ocean; after a couple of weeks the crew succeeded in repairing the ship and resumed the cruise, but they had forgotten a violin left on the rocks. The savages took a long look at the strange object and asked themselves: what is that for? What it is the use of this curious object? After a few years the smartest one - the youngest son of the tribe chief - came up with the answer: it is a musical instrument! How so? he was asked. Look, you may beat the drum on its backside, was the answer. The scientometricians beat the drum on the backside of science.

Impact factors have been devised to gauge the "performances and the results", there is no room anymore in this world for a quiet, gentle scientific author, he has to know that, once an author, he is supposed to have already made an impact, even a small one, on mankind; he has already entered a sports competition where everyone is gauged, and checked for drug taking. The scientific authors are under surveillance: bibliometricians keep an eye on them; the science police do not sleep. The scientific authors are potential wrongdoers, who sooner or later will land in the Science Court. With a digital smile on their faces the bibliometricians ask: whos afraid of bibliometrics? The scientists have remained silent under this question: who is not afraid of insane people? But who is afraid of scientific papers?

A "peer" reviewing a scientific paper takes a long look at it and says to himself: it looks familiar to me, but where did I see such an object before? The story goes that a policeman once found a mirror on the pavement. Look, an identity card! he said, looking at it. Who lost it? He took a long look at it, and said to himself: where do I know this guy from? Is he one of my neighbours? Did I meet him on one of the streets of my assigned sector? He looks so familiar to me! Let me take it to the chief inspector, he should know the guy. Look, chief, I found an id, and the guy in the picture looks so familiar to me, but I do not know where I met him. The chief inspector took a long look at the mirror, and said: you are right, sargeant, this guy looks very familiar to me, too, but I, also, do not remember where. They scratched their heads for a long while, and finally, the chief inspector, who is always smarter, came up with the answer: Yeah, I know now, I remembered, I met this guy in the barber shop! Right inspector, said the sargeant, quite right, I met him in the barber shop, too! This is a "peer" reviewing a scientific paper. He is baffled by his own equality. But scientists are unequal people, in science there is no equality. Only the communists are equal, and the mediocrities. In which case they are equal to zero.

"Peer reviews are said to promote the scientific results. Speaking of science progress we should remember that science progressed by the interaction between more experienced and less experienced scientists. If there is a progress inside science, i.e. a certain internal motion, then there should be inequalities, between which this motion proceeds: the less experienced learn from, and get assured by their superiors, while the latter get confused and lose their confidence by the contact

with their inferiors. Heisenberg took his paper to Born, he did not look for "peers". Progress in science was always achieved by this process, and only by such a process. No scientific discovery came from a team of "equal" scientists. New elementary, and more elementary, particles were not discovered by teams of "equal" scientists, those large teams associated with such discoveries were not of scientists, but of mechanical, electrical, computing workers. The Los Alamos project did not discover the atom bomb, it fabricated the atom bomb; there is a big difference. In every such big "research" team there is probably hidden one, or a few scientists, but they are hidden well at the bottom of the list and on the back seats, because science must look "democratic", not "aristocratic", and there is no room in it for scientists of distinction. All the founding fathers are dead, there no one is of their stature anymore, and there will not ever be, because it is the end of the world, it is the Big Crunch; we are the only ones left alone on the earth, and we are the poor, pitiable, lost, "equal" children of science (n.b., do not say that we are ignorant in science, and internally consumed by greed and an huge emptiness), at the mercy of this apocalypse, so what are we going to do? Look, the angel has already blown the silver trumpet, and we are not yet prepared for the professorships, chairs, honours, glory, power, and the Nobel prizes waiting for us. What do we do? Let us do a New Look, a New Image, of science.

Because, after all, what is this science? We are science, say these little emperors. But only taken together, as "peers", like potatoes, or like the army, or in the communal bathhouse. Individually, they are lost, speechless, deaf, blind, their hands tremble covering their eyegs, they turn red, perspiring and suffocating. To be taken as an individual is the final solution" for any "peer", he has no one to be equal with. En mass, however, what do they claim? Well, they claim that the "disinterested, humble, skeptical seeker of the truth does not exist". Science is a matter of subjective "consensus" (especially between us, not between others), scientific knowledge is continuously "negotiated", facts are "constructed" in a collective process, our vagaries are natural laws, writing scientific papers is "Machiavellian and Byzantine politics", they are meant to sell a "scientific pizza"; successive versions of the same data differ in scientific publications, and they must differ, a scientific paper is a "fraud, a fiction and a perversion", and it ought to be so, because this is the New Science; we publish scientific papers, namely new-scientific papers, but please do not read them, they not merely conceal but "actively misrepresent"; do not read them, listen instead at the keyhole. This is scientific research of the boudoir.

When authors, and they are surely the most prolific authors, the reviewers are incapable of speaking about their papers. Though garrulous and great lallators, they do not speak; they babble some long rigmarole about equations and typographical signs, pointing to figures, pictures and handwriting. Could they really speak, they would be great speechifiers. Unfortunately, they are only lispers, abandoned by their language. They do not speak, they only write, point and tell; they are great tellers. They communicate by signs and by fingers.

We can be sarcastic, we can be malicious, we can even tell the truth. Yet, the problem persists. We are told that there is a big shortage of money for scientific research, we are told, straightforwardly, that scientists are too many and too useless to be financed as before. The financing bodies require guarantees that the small amount of money still given for scientific research is spent "efficiently", they want to be assured by someone, by something, in some way, that "their" money is spent "correctly". The credibility of scientists is no longer enough, there is no credible scientist left, because that bunch of neurasthenics took good care to discredit everyone, and succeeded. And it was they, too, who came up with another formula: neurasthenic science, bibliometrics, scientometry and "peer reviews". Their philosophy is very simple: Give us your money for science and we shall show you in return that you were right, you made the right thing, you made the right choice, and your money has been spent as well as possible. How shall we show you this? By publishing automatic, serial and trivial papers, by rejecting the few good ones (because they are

few, are not "representative, because they are not sufficiently novel, they are "scientifically old" and do not illustrate our "paradigm"), by producing thick reports of evaluation, by scientometric methods, by numbers, by everything, by our very money-enlivened enthusiasm. The proper scientific research, and its results, are nowadays virtual objects, as any spiritual production ought to be, you see? You look at them and you do not see them, right? Right! Why? Not because they are non-existent, not at all, but because they are spiritual matters, they are there but you can not see them, without us, let us show you how to look at them in order to see them, well, you must look at them through our eyes, see? And we, too, must look at them through our pockets, see? for the method to work; right? Thats the way. What? The emperor has no clothes? Not at all, the emperor is just a spiritual entity, a sort of superghost, which exists but there exists no proof of his existence except ourselves. In the matter of funding for science, in problems of scientific money, we are the only truth, the whole truth, nothing but the truth, and the ultimate truth. We are the final solution. Indeed, truly they are, to scientific research.

Famous theorists of physics claim vigorously today that we shall soon be in possession of The Final Theory, The Ultimate Theory, The Total Theory of Everything that Exists, ever Existed and will Exist. Does not it sound like The End? Are not we ourselves the ones who irresponsibly claim that we are finished? We do not have a science of science, we do not know how to do science; had we such a science of how to do science we would teach it and everybody would do science and would be a scientist. Would that not be the end? We only know that, while many of us work hard and honestly, only a few of us succeed in having scientific visions that work. We can only say that science is perhaps of a divine nature, and, as such, not entirely accessible by all of us. Scientific research is defined as that which is intended to produce what is new and correct within a science historically formed and recognized as a science. The essential thing here is that the true scientists know what they are speaking about - science. Science has its own questions, problems, and, what is more important, its own scientific spirit, formed as such during its history, and this must be known before starting to write, publish or evaluate scientific papers. The main problem with the science "peers" of today is that the vast majority of them are ignorant of science, and what is worse, as with all ignorants, they do not even dream that there could be anything to science besides their own phantasies. Between the earth and the sky are many things of which there is no trace in their "science", and, conversely, there are many things in their "science" of which no trace exists between any earth and any sky.

Finally, it is perhaps worthwhile to note a few more things. Yet, even now there exists scientific research properly conducted, there are scientists who can be fully trusted, there exists a wonderful world of scientific inquiry and truth, there are beautiful scientific papers; God exists. Where? Among us, within small, quiet, humble scientific confreries. The old question: how can we know this, how can we know that all of these do exist? has the same old and simple answer: by sincere faith. If we believe sincerely in all these truths, then we begin to learn, we begin to know, we begin to see these truths; and we begin to see an absolutely beautiful world. The principle of truth is the truth itself. Only the one who knows knows that he knows; those who do not know do not know that they do not know. The world is a matter of belief, and the scientific method is itself belief in God.

And, to implement a practical solution, let us account for the money, let us count the scientists; let us account for our needs and our ideals; let us count the products of science and tax their utilization to fund scientific research; let us spell out the truth about neurasthenic science and its promoters and followers; and let us be sorry for them.