On science and scientists

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Background

I realize that I do not represent the standards of academic specialists in the field of epistemology and ethics. I represent moral conscience, and moral functioning not from the scientific-cognitive point of view, but as an average academic surgeon who deals with moral problems in his everyday practice. However, such problems influence our thinking.

My presentation was meant to be in a form of a lecture on surgery. I am aware that this lecture on diseases, symptoms and complications is directed to healthy recipients, and that some of the discussed diseases may be rare in the general population. I will refer at this point to the words of father Tischner – i.e. I will talk about the typhus and not the 'typhusees'. Therefore, I will not deal with the patients themselves but with a clinical description of the disease.

Apparently, any case of a deviation from moral standards in science cannot be ignored, and ought to be a subject to a thoughtful consideration and reaction by the academic milieu, in the same way a single case of swine flu or HIV cannot be ignored. Trivialization of impropriety and anomalies, as well as passivity in the face of such events is a mortal sin, not only against science.

Therefore, my speech will not pertain to the moral status nor to the dynamics and trends of morally questionable affairs in Polish science.

Repeatedly exposed scandals, although not on the same scale as Woo Suk Hwang's and Gerald Shatten's case, provide substantial material and convincing arguments for supporting radical methods of fighting against moral flaws and indecency in science.

Native Problems

Polish science faces two fundamental problems: external – administrative and financial, as well as internal – passivity or insufficient moral self-discipline of scientific circles. It is most apparent in:

- lack of credibility of peer-reviews and evaluations of scientific papers and applications,
- insufficient effectiveness and lack of consequence in fighting against apparent pathologies,
- professors merely providing only their titles to academic institutions,
- selling of masters' diplomas and doctoral theses, as well as plagiarism,
- treating doctoral students as low-grade staff and cheap work force.

These are only some symptoms of poor moral constitution of a given scientific institution. It exhibits an incredible shortsightedness because even in a not-so-long perspective, such institution is going to lose the competition not only on scientific grounds, but also on the economic market, as a business enterprise.

Science

Our culture and civilization has originated from and is based on two pillars – science and morality. Obviously, scientific achievements always precede moral considerations and science itself does not provide any method to decide what is moral and what is not. Socrates assumed that as human race evolved, knowledge and wisdom on their own will spontaneously shape and regulate moral perfection through thinking. It appears, however, that the Philosopher did not foresee a time in history when everyday life will be shaped not by morality, sense of common good or empathy, but by profit.

Therefore, knowledge has not only failed to be a guarantee of moral standards, but so often it proves to be a threat. The aim of science is not only to learn about the world but also to make it better. Its most fundamental objective and value is the truth, pursued with stern rectitude.

The drama of human greatness is that one has a choice between the good and the evil, between hope and peril, and that evil may be re-defined as good.

Limitations of science

In Greek mythology, the mastery of Asklepios, the god of medicine and healing (known under the name of Esculapios in ancient Rome), was so great that he could raise the dead from a grave with his healing powers. Zeus feared that he would thus disrupt the order of the world and killed "the god of healing", placing him among the stars as the Ophiuchus (the Serpentarius) constellation.

Why was Zeus so apprehensive? He feared that it would destroy the order of the world as biology offers immortality to human race as a whole but not to individuals, not through regeneration or raising from the dead but through a tremendous arsenal of genes it has at its disposal.

Are there limitations to the science? The most common answer is that limits of science are set by the finances, morality, imagination, dependence or lack of qualifications. However, deception, lie and evil set those borders imperceptibly but more effectively. In any case, science ends at a point where fraud begins. And "Truth does not do so much good in this world as the semblance of it does harm."

Scientists

XX century brought professionalisation of science and scientific activity became an ordinary but profitable vocation. Therefore, both motivations involved in scientific work and ethical considerations have changed. In the scientific community we can distinguish between those who live for science and those who make a living out of it. Despite the fact that both groups are necessary for making progress, only true scientists consider science their only and cardinal occupation. For the rest, it is only a career. However, good motives do not always guarantee an honest scientific conduct.

This is the reason why every scientific worker should be evaluated considering together two aspects: cognitive and ethical. Despite a high academic standing, one may easily become a hostage of fame, glory, position and money.

The Scientist

To be a scientist means to fulfill one's life–long passion for research in every situation and according to one's best ability. In the presence of appropriate conditions, a scientist has a chance to maximize productivity and realize his/her full potential. They are the ones who provide values, not just the results.

However, let's remember that just as the state of democracy is determined by the voters and sport is determined by the sportsmen, in the same way the shape of science is determined by the mentality of scientific workers, especially the scientific elite, regardless of external conditions. Therefore, economical hardships cannot excuse for trivialization of pathology. Only rigorous care for the moral status of scientific workers, even in the state of extreme underfunding, gives a chance to quickly defeat the crisis when financial circumstances improve. Otherwise, at least one generation of scientists will fail to change their demeanor. This will mean not only wasting of time and money, but also losing a chance to rid the scientific world of pathologies.

Therefore, under conditions of financial hardship, ethical and moral standards cannot be mitigated, but should become even more stringent. It is a case of thinking about the future and looking into the future.

Intelectual and Spiritual Elite

*Scientific community is not just a group of random people living together. Neither do they live in "splendid isolation", but among other scientists, in the system of interdependencies that determine the moral condition of the scientific milieu.

The moral and cognitive potential of this community or an academic institution is shaped by a team of workers, their leaders and their standards of conduct – the so-called "scientific elite". The extent of implementation and compliance with moral principles depends on the awareness of the entire scientific circle and especially of its elite.

The function of elite is not only to proclaim the standards of decent conduct, but also to rigorously impose, enforce those standards and to abide by them personally. That signifies lack of consent to fraud, holding multiple jobs, fictional positions, fictional diplomas, trivialization of fraud and indecency.

However, all around the world, the significance of elites depreciates as a result of growing domination of mass culture and including in the intellectual elites the so-called "titled bureaucrats" and people holding high positions due to their administrative and political associations, "integrated circuits", or nepotism.

What is the sense of responsibility of such members of "elite"? Without a doubt it will come down mainly to ensuring their own positions and well-being. Due to their obligations, they may promote a concept of "political morality", which will depend on the needs of their sponsors. This is why a concept of "regressing elitarism" was created.

"The (un)Holly Truth"

At a time of his term as a provost, one of the former, highly positioned members of the academic administration said to me in a surge of honesty: *"You are lucky because you do not owe anything to them"*. I said: *"Well, yes, but I will not get very far"*. *"That is very true"* – he replied, – *"because quite often one has to pay a very high price for independent thinking"*. Then it was my turn to reply: *"Very true"*.

„Hero of the party"

The demand for intellectualists not only does not disappear, but even increases. However, contemporary "intellectual wealth", as opposed to a financial one, is becoming less and less attractive in the public eye. The hero of the party is usually a successful businessman. Very rich people are highly regarded in Poland irrespectively of the ways in which they acquired their wealth. In public opinion, a financial elite is successfully competing with the scientific elite.

At this point some speculations come to mind: can we deal without an elite in the scientific society? Obviously, lack of an elite signifies ordinariness, mediocrity, and paucity. But can a scientific elite exist and function in an environment – beginning with the smallest one such as a clinic or a department and ending with a large institution –, in which no one confronts existing pathologies? Also, not all members of the intellectual elite are willing to become guards of the collective conscience.

Plus ratio quam vis ?

Even though the motto of the Jagiellonian University introduced by Karol Estreicher in 1964 declares: "Plus ratio quam vis" (Let reason prevail over force), in contemporary everyday life wisdom does not possess the executive

power of money. And so, the poor but clever is often treated with contempt for the amusement of the rich and strong. Naturally, there are also the wise, just and wealthy. In every profession or nation, existence of scientific and financial elites, who are guided by the truth, wisdom and integrity, is absolutely indispensable for any organization or a country to prosper.

Democracy

The word „University" sounds very noble but knowledge and science have been taken from the pedestal of sanctity down to the market and academic institutions began to provide services for the general public. Their scientific and educational roles are turning into commerce. It is accompanied by the quantitative and qualitative lowering of their scientific and academic potential. The intellectual void is filled with persons with "random scientific potential", who use science as means to make a living and gain prestige. A charlatan would not miss such a chance. Nowadays, academic institutions do not make a profit as a result of their research, but through their educational activities. Worldwide, scientific institutions support themselves through their scientific achievements, which enables them to finance education. They also possess money to search for and train young talents…

Moreover, despite the fact that we are used to speak nobly of academic institutions, they are also populated by sinners. However, in their own opinions, they are innocent and some, despite the magnitude of their sins, are "unsinkable".

*Under officially accepted democratic rules governing academic life, domination has been taken over not by the elite, but by the voting majority and mediocrity. The mediocre will not see the need to search for and cultivate talents. Polish mediocrity can be described as follows: "I do not want to be better than you, but I will do anything to put you down". Furthermore, many non-intellectual, although very effective, administrative and political methods of neutralizing competition have been created. *And here comes a paradox: the more democratic academic and scientific structures become, the more likely a hidden crisis becomes, as a result of mediocrity.

While taking part in meetings, sessions and committees, I always hear brilliant thoughts on the scientific community, the mission, and the calling. It is said that all shortcomings are always due to lack of money or that someone else is responsible. Associated with that is a growing indifference to depravation.

The scientific world can only function under enlightened absolutism. However, if the society and science were to be governed by political absolutism, then it is better to keep the so-called democracy. Although, without moral standards democracy becomes an even greater, mafia-like threat.

Indifference

It is an old truth that for the evil to triumph, it suffices that the wise and the decent do nothing. Moral indifference or moral ambiguity is often the disease of the educated, intelligent and even so called 'wise' men, although it is hard to call morally ambiguous people wise.

I have been wondering about the reasons for indifference to indecency and evil. I think that this indifference reflects fulfillment and personal satisfaction with the existing status quo. Some people do not see the need to take risks and change this "status quo". This indifference is naturally disguised as "freedom and cognitive pluralism".

I have recently read that currently the level of complacency among Poles is the greatest since the XVIII century.

Quality

Apparently, there are certain situations in which the number of independent investigators per square meter of an academic institution is supposed to reflect its worth. Everyone, both the applicants and the decision makers know that it is not about the quality but about climbing up the ladder of academic hierarchy, greater number of diplomas, degrees, titles, commercial profits and new clients – the students.

It is yet another mechanism in which mediocrity grows in power, even though the ethos of old-time institutions relied on the "elitism of the university". Elites were and still are the initiators and advocates of progress and warrants of morality. Optimization of the development process must be based on a vision and quality criteria.

Plato defined quality as „a certain degree of perfection" and Cicero coined a term *qualitas.*

It is astounding that there are tendencies for lowering the standards for granting academic titles but without a simultaneous raise of criteria for evaluation of scientific work. This process bears signs of serial production of titles without raising of scientific quality. These are anti-qualitative tendencies. However, fundamental measures of scientific progress are increasingly stringent quality criteria.

I also think that the system of academic funding was quantitative rather than qualitative and as such was a main threat to development of science. Discussions on the possibilities of winning a Nobel prize are futile and worthless and accessorize for lack of constructive thinking.

To those who underestimate the significance of quality in science and in life, I should illustrate the problem with the following declaration: in case of illness I would rather be treated by one well-educated doctor than five barbers, even if they all had Ph.D.'s

Authorities

As a young assistant professor I have been repeatedly asked by younger colleagues to defend them in Academic Commissions and before a Professional Control Committee. A well-know professor, a true academic authority, was usually an intercessor. Although he did not have any knowledge about working conditions in, for an example, an

emergency department, he knew everything best. In such cases I, a young assistant professor, was condemned to be defeated not by the force of arguments but by the force and the magic of authority.

The greatest danger presents itself when:

- ambitious individuals announce themselves, sometimes with the help of the press, as authorities and consider themselves infallible. The tendency to call oneself an authority increases with age. *"**He**, indifferent to the good and the evil…does not require anything but the glory of his own endurance",*
- People taking up high positions begin to consider themselves scientific and moral authorities and *"There is no greater heresy than the say that the office sanctifies the holders"* (J E E D Acton).

An extreme example of threats presented above are people – as L. Kołakowski would say – "*…who are always right in their opinions on everything".*

Indispensible attributes of the authority include: „wisdom", extensive knowledge and professional experience, integrity, independence of thought and, above all, self-criticism. Further danger comes from the fact that authorities get used to having authority and loose self-criticism.

"One who relies on an authority uses only one's memory, not reason". It was Leonardo daVinci who, through this sentence, proved his greatness in noticing the limitations of his own genius.

Likewise, Prof. B. Skarga stated that *„only the reason should have authority".*

In any case, an authority should never proclaim judgments that free the listeners from logical, causative and critical thinking, as it is a successful modern way of propagating lies disguised as the truth. One must never endorse thoughtlessness but must force others to think.

The true authority will never take up a role of an oracle. The force of an authority lies in the fact that it possesses arguments others do not even see. Moreover, authorities cannot be deaf and mute to the abuse of moral principles and good conduct in science. An old roman motto fits them particularly: "Qui tacet, consentire videtur" – He who remains silent appears to consent. If an authority does not take up that role, it is not a true authority but a self-proclaimed one.

To me personally, the greatest authority in terms of morality is my own mind and conscience. However, it does not mean that I do not need to resort to moral authorities for rationale.

Opinion of an authority is more than an advice but less than the truth and certainly it is not a proof.

„Such Times"

The disparity between a generally accepted ethical code and morality in practice is quite astounding. Everyone declares opposition to corruption but in reality they support its growth.

It comes from the fact that nowadays the sense of 'morality' has changed. The ordinary life is also different and people only see value in things which, in the end, ensure their gain or help them fight the competition.

Everyone proclaims the necessity of abiding by the moral code in life and academics but at the same time there are many who would be willing to take advantage of a human being in the name of science and greater good. There is an unlimited number of sick people who require biotechnological procedures and, as follows, an unlimited source of high and steady income. Therefore, stocks of biotech companies gain in value several times a year. What kind of conscience, idea or even religion could compete with such wealth?

Pretenses

The art of deception came into play in the contemporary world and, despite it not being an academic specialty, it may become quite successful in this environment. In the "state of pretense" we experienced delusion of independence, justice, freedom, false pluralism, pretense of academics, health care, education, independent media, semblance of work and make-believe wages. Even the right to health care written in the constitution and implementation of communism in our country were just a sham. But today's capitalism is also just a delusion as we watch corruption destroy the fundamental value of capitalism - the competition.

Therefore, it is not surprising that specific conditions developed, which allowed for making pretenses also in the scientific world. In this mechanism, fake reviews are written in hope for reciprocity. There are also delusions of values, impartiality, meaning, pluralism, goodwill. Resemblance of rightness and truth often determines success to greater extent than actually possessing those values.

Pretenses are responsible for the fact that the there are more results than values in scientific works. This is why this problem is neither trivial or fictitious, but it is generally underestimated. In the end it leads to "junk science".

Fraudulent scientific, civic and moral authorities grow from and are founded on fictional achievements. Bertrand Russell: "*Without civic morality communities perish. Without personal morality their survival has no value*".

Morality, Ethos, Formalism

C.K. Norwid in his poem „Song from our land" acutely described the potential of human mind by stating there is: –
…wisdom – of deception
Deception – of knowledge and brilliance,
Formalism of the truth – intrinsic insignificance…,
And pride of all prides!

We are witnessing a replacement of morality and ethos by formalism. It is not procedural formalism but formalism in appraisal of truth. An example of formalism in appraisal of

truth: **a decent man** is one who does not commit a crime. However, from a formalistic point of view, it is also a man who committed a crime but the evidence of it has been concealed.

It may also refer to works of plagiarism, creating a semblance of truth, which leads to an "intrinsic insignificance" and straightforward falsehood. Ethos of democracy deteriorates before our eyes. Why? Because it was made formal only.

Ethos of principles is also disappearing. The name remains but the substance of the matter changes. Using the qualities of human mind, moral standards are replaced by legal regulations. They are later formalized and, in the end, interpreted and used according to current financial or political needs.

Pavlov

To one of the primary misconducts, I would account shaking young people's beliefs in the purity of science and of the mechanisms by which it is promoted.

Years ago, as a young doctor fresh after medical school I experienced a great shock. I believed that every word of a scientist is true and it is holly. I was participating in a national conference on application of Pavlov's discoveries in clinical medicine. I was carefully noting every word and declined Pavlov's last name in every possible case and with exclamation marks. During the intermission, the main promoter and speaker of the conference received news that his patient, a wife of a very prominent man, was suddenly and unexpectedly in shock. Discussion at the bedside on the reasons for the collapse was very nervous. One of the assistants finally approached the Head of the clinic with the words "your line of reasoning does not follow the pavlovian tracks". The Head promptly replied in a raised voice and an excited tone: "I do not give a damn for your Pavlov".

I almost collapsed. The idealistic image of the scientific world I believed in suddenly disappeared. I lost faith in the absolute purity of science, mechanisms of its development and virtues of so-called scientists. From my own observations I know that such approach, although not common, it is not unique. It also usually leads to success.

All the more, in my opinion it is an obvious proof that the truth should be one of the principal values we are passing on our youth. The Head of the department I have spoken of soon became a professor. Most probably the academic decision makers had the same attitude towards truth as he had. This realization helped me many times in my appraisal of reality in relation to the purity of science and the mechanisms of its promotion.

The ethics of one's beliefs

I am going to recall an event that took place in 1949. During a lecture on biology Prof. Bowkiewicz said: "they are demanding that I praise everything that is Soviet. Therefore, I am telling you that due to Miczurin's and Lysenko's experiments, Soviet pigs are bigger than the English ones. There were no interferences from the authorities and financial restrictions. It was Professor's last lecture.

Politics

To the greatest crimes against science I would account bringing politics into the lecture hall. The essence of science is knowledge, not one's beliefs. Politicians pretend not to know that and professors, as it sometimes turns out, do not respect that aspect of academics.

On the other hand, academic financing cannot be an instrument against science and the scientists. Science is a search for the truth and the truth is irrespective of the beliefs of those in power. It appears that in order to find the truth, one sometimes has to have courage to go against the beliefs imposed by the authorities. I repeat – beliefs are not the essence of science. Knowledge is. However, politicians do not pursue the truth, but victory or compromise.

Ethical codes

In-depth analyses of ethical codes do not change anything, as it is not the lack of codes that poses a problem. What we really need is morality, not detailed regulations, which can be easily abused. Moreover, regulations cannot encompass all life's situations.

Apparently, forming new moral and ethical regulations does not influence their implementation at the workplace and in everyday life.

Morality should be an indispensable, inherit virtue of every scientific worker, not a reluctantly accepted necessity.

"*O tempora o mores*", – my teachers in surgery would say, that regulations are most important regarding integrity, decency and credibility in science.

The law

If a general scientific activity cannot be simply based on morality, clearly we cannot allow for the indecency to be profitable. It must be properly punished, according to the existing law, taking into the account the fact that inevitability of punishment is more important than its severity. To let a crime go unpunished, in such cases, is "more than offense – it is a fault".

Reforms

Despite the academic institutions being constantly reformed (*„Universitas – institutio semper reformada"),* structural changes will not suffice. It would mean that we are missing the heart of the problem. Above all, we ought to strive to bring up the new employees in the spirit of scientific ethos.

One may wonder whether the masters shape the schools or the schools shape the masters. There is some interdependence here, but it always begins with the masters. Scientists are the ones who constitute science, not the administrators, and they should be at the center of attention.

The conclusion is simple – that mere structural reforms without a moral recovery of the milieu and without a proper financing are usually unsuccessful or even harmful, as they may introduce chaos and confusion. The advantages of structural changes introduced by the successive political parties may only be compared to the value of pouring sand from one place to another.

Hugo Kołłątaj and Stanisław Konarski

Recently, while preparing a chapter on the history of Polish surgery for a new surgical textbook, I have read that when Hugo Kołłątaj came to Cracow to reform the University, the professors greeted him with flowers. They were very enthusiastic up to the point when he said what he was going to do and when general statements were replaced by actions.

The resistance on the side of academic society was so great that they exiled him back to Warsaw. He acquainted the wise and enlightened members of Ministry of Education (KEN – Spring of 1778) with the state of affairs at the University, stating that the Academy was in complete and all-apparent decay.

He came back to Cracow with appropriate endorsements from KEN that gave him an absolute authority. Then, despite the passive resistance, he followed through with a reform. Nowadays, the University is very proud of this reform, even though at the time of its implementation it was severely unpopular.

It is an illustrative example of the mentality and a typical reaction of the academic milieu. Everyone desires a reform but without changing own "status quo" and "status quo" of the elites of a given institution, even in the face of "*all-apparent*" downfall.

Stanislaw Konarski was among many prominent figures awarded by the King Stanislaw August with a medal "Sapere Auso" (dare to be wise) for his courageous efforts in reforming the educational system despite the resistance of the academic community.

Self-control

The academic community possesses many mechanisms of self-control. One may think that organs and even institutions appointed for that purpose either do not have the sufficient executive powers or the powers they have remain unused. At this point, we should ask ourselves about the cause of the existing situation.

The simplest example may be lack of effectiveness in fighting plagiarism. Why does selling of doctoral theses, master's theses and plagiarism even take place? The answer is simple…because it is possible. The likelihood of punishment is small. Words of resentment are merely covering the permission for such conduct. Under those circumstances, such misconducts spread immediately like swine flu or HIV.

Perspectives

We may only expect an improvement or a cure when the entire scientific community, led by the elites, takes an active role in designing and implementation of methods of prevention and combating against anomalies in academics.

Lack of protest on the part of the community or even indifference to the discovered violations is equivalent to approving the existence of a "gray area". As a result, ethical standards or even simple decency will never be put into practice. Moreover, I think that we are lacking a rational idea and an overall plan for fighting scientific fraud, which is a formal and moral duty of the entire community and its elites in particular.

I am putting the greatest hope in the activities of the scientific elite due to the fact that it is equipped with the greatest executive powers and organizational means. It also possesses high academic position, experience and authority both in the scientific community and the society. Such an action would be a manifestation of farsightedness and "looking into the future".

In light of the existing facts, one must deeply consider whether it is possible for the scientists to rid their own community of pathologies and whether they can judge themselves. Mere moral deliberations are not going to eradicate moral pathologies from science and everyday life, as pure intellectual considerations may not force the scientists to take a definite actions against mischief.

One question comes to mind – do the scientists have the means and are they capable of implementing and executing the methods fighting pathologies in science with all stringency? After all, their mentality differs from the mentality and methods used by police officers, prosecutors and judges. In reality, they often exhibit high defensive skills when it comes to defending personal benefits or interests of their group, using their authority under the guise of freedom rights and protecting the good name of the institution.

However, in the end we must remember that in long-term perspective, scientific and academic ethos does not exist without financing.

Conclusions

If numerous complaints and reports on imperfections of polish academics turn out to be justified, we must come to a realization that the prognosis of "the world floating away" is about to come true and then "*…iron debris will remain and a hollow, mocking laugh of the generations"* – (Tadeusz Borkowski). In order to avoid those predictable consequences, one should be guided by a principle of "*scientific truth and moral truth"* (JP II) both in cognitive processes and in everyday life.