Keynote In and out of the Lab International Conference   
 **SciTec comes 1st!**  
*Journalism as a critical force and 4th power for the societal reception of science and technology: 9 demands for action*Wolfgang C. Goede, European Union Science Journalists’ Associations EUSJA, Hon. Secretary

Science & Technology in the Public Sphere  
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Good evening, ladies and gentlemen!   
Καλησπέρα σας, κυρίες και κύριοι!

Dear Mayor Ioannis Boutaris, dear city council member –   
dear academicians, students, colleagues!

It’s a great honor for me to be in Thessaloniki and to have the privilege with other colleagues to open this conference. It is dedicated to promote the CRITICAL understanding of science and – as I’d like to add and in a few minutes to explain – TECHNOLOGY. The conference organizers Gregory Paschalidis and Christos Frangkonikolopoulos have identified in their overview two main forces to provide this critical and correctional voice: journalism and the public. These two sectors, very much indeed, are key factors for this impact, but unfortunately they have been underrated in the past.

My introduction to this conference will try to shed some more light on them, how they are intertwined with science and technology, or in brief sci-tec, why journalism and the public have not lived up so far to their controlling power and how they could form a new strategic alliance with research in Europe.

Since we are in Greece and in the vicinity of the Aristotle university, let’s get started with the philosophy of our home continent Europe. We might say the Occident was born right around Thessaloniki in Stagirus almost 2500 years ago. That’s were Aristotle was born and from there he started to lay the foundations for Western thinking: to reflect universally and across borders, not only one-track minded, either philosophical or biological, but to connect the various avenues of knowledge and perception, bridge them and arrive at common and generally accepted, intrinsic hypotheses which are carried by a set of universal and human ethics.

Aristotle was a scholar with a very broad thinking, interested in geology, zoology, the stars, psychology, mathematics, arts and philosophy. This universally educated man was the prototype of Western science and humanities and a role model for more than two thousand years.

Only in the recent past this tradition has disappeared, with many adverse effects. As we say in German, the left hand does not know what the right is doing, research and scientific thinking have disintegrated, everybody is pursuing his own goals without an overriding vision and agenda.

This, among others, has led to a situation in which more and more people view our planet under attack by hostile developments such as global warming, expressed by the weirdest weather phenomena during this past winter all around the globe. Perceived as hostile is also the exploitation of the planet and dwindling resources, be it petroleum, clean water or clean air. This has resulted in different attitudes: some don’t give a damn and say “devil may care”, some feel very meaning- and powerless in confrontation with these threats, and a growing amount of people think: “too late”. The point of no return has been passed.

This lethargy, coupled with a demonization of science and technology contributes to an increasing overall pessimism of defeatism. So Thessaloniki is the best place on earth today and tomorrow to remind us of the tradition of science and why we need to return to these eternal benchmarks – with modern means, the tools and methods of the 21st century and 3rd millennium.

To put all this into a nutshell: We would be kidding ourselves if we assumed that we could roll back 2500 years of evolution of our European continent and its dissemination over the planet. We decided for intellectual and technical growth, along the rules of scientific thinking, and there is no escape. So we might as well stand up to these challenges.

Again, Aristotle serves as our paradigm and compass. Courageously and vigorously, he was one of the first, perhaps the very first who dared to say that the planet constitutes a sphere – against the conviction of many foes. Acceptance had taken 20 centuries, but now, surprise, the perception is swinging back, symbolically: Globalization has flattened the word and its established hierarchies, states bestseller author Thomas L. Friedman. The Occident, Europe and its twin the US are being pushed out of the political, scientific and economic driving seat.

I have just come back from a five months’ stay in Colombia and from Latin America the globe looks flat like a disc. China, India, Brazil have become the main suppliers of technology and to some extent also cultural goods. Unconditional growth, the lessons of the Western world, have become their dogma.

While we cannot compete with these countries in the labor market we have to sniff out new routes of development and evolution and become innovative in the true tradition of our cultural heritage. What we do can achieve is controlled, environmentally safe, sustainable, let’s say intrinsic, resilient, upcycling growth. A more human type of science and technology could become the major growth factor of our economies.

While we are working harder and harder all the time and, simultaneously, get more and more distracted, becoming slaves of the ultimate gadget communication technologies, while Big Brother is spying us out, our mental health starts to go down the drain. The European Health Forum in Austrian Bad Gastein last October, broadly attended by members and affiliates of the European Union of Science Journalists’ Associations EUSJA, addressed the alarming decay of our mental condition.

Almost one third of the populations in Europe suffer from mental disorders such as depression or anxiety. Alcoholism and suicide rates are rampant. At the same time health costs are soaring. Policy makers seem helpless how to cope with this, or as Greek Health Minister Adonis Georgiades sort of resignedly observed: “The entire continent enters a permanent state of crisis and austerity.”

Former US president Bill Clinton had it right: “It’s the economy, stupid!” This was a wake-up call 20 years ago for change, in my own interpretation not to produce constantly more innovations and gadgets, throw them away and replace them at a breathtaking speed, but de-accelerate and look for new solid values.

In Munich, this coming October the so called Climate Fall will be convened for the 9th time. This two week long conference is looking into ways to cut down on carbondioxide, energy use, consumption, waste, traffic. Climate Fall 2014 will highlight “sufficiency” as opposed to “efficiency”, real and profound happiness, intrinsic well-being, beyond material consumption and increasing growth. Perhaps a step into the right direction and an enforcement of my hypothesis which I’d like to lay out and explain in this keynote.   
  
Some of you might remember Johann Wolfgang von Goethe’s poem about the sorcerer’s apprentice. He called the spirits to help him to carry water, but in the process loses control. We seem just like these ghosts, trapped in a treadmill, running faster all the time in this rat race and drowning in the floods, directed by some kind of spooky formula, until the magician steps in and stops the death-prone nuisance.

And what do you think who is the magician, who has the power to do so? José Manuel Borosso or Dr. Karolos Papoulias, the physicist Angela Merkel or the American Association of Advancement of Science, Pope Francis or Barrack Obama, Bill Gates or Coca Cola? –

They might all contribute to change, if they really wanted to, however they are so entangled in the system that they hardly can. No, change is not descending top down but works bottom up. So it’s you, the public and the civil society, the tax payers and electorate, the consumers and NGOs who have the power to change, also within a framework and scheme of governance which originally was born in ancient Greece and which might need further elaboration, extension, sophistication: D E M O C R A C Y .

And there are allies: the media. As one of the accomplishments of the French Revolution, an independent press was born which became an advocate of the public and its concerns. And this is exactly what science and technology journalism have to comply with: become an independent voice and explain to the public which type of research and what sort of technology is practical, beneficial, future-prone in a stabilizing sense – and which research does not fit these requirements. And this, again, is also up to you folks, the students here in the audience who are being prepared and preparing to become journalists.

We come, in the middle of this discourse, to its central thesis: Science, scientific thinking, basic research are indispensable for our culture and its further evolution. Scientific applications are the base for all our technical systems and, in recent decades, high technology. But hitech does not exist for its own sake. It is accountable to society, its stakeholders and citizenry. As all scientific endeavors, it follows an ethical code. This has been disregarded or blatantly and arbitrarily abused and exploited in the past by ideologies of all kinds.

You might have heard this saying. Engineers and technicians are the best accomplices of dictators. The rerouting of Russian rivers during the communist era ended in fiasco. Biologically explained racism led to factory-like gas chambers and the holocaust in Nazi Germany. All a matter of, as it seems, the past, almost medieval times?

No. Or how do you explain this mind-boggling example of our present age. While Hungary does not recognize the fact that science and industry produce genetically modified organism, so called GMOs, and bans media coverage, Colombia is flooded with GMOs and farmers cannot get any more natural maize/corn seeds. Protesting campesinos have been shot.

Most scientific research eventually results in technical applications and I’m arguing that these must be compatible with what we consider humane. In one sentence, tech and hi-tech has to be transformed into what I have phrased HUTech. There is no such word until now and I have derived it from my studies of Robert Jungk, a German-Austrian-Jewish science journalist and futurologist from Salzburg. Last May, his 100th birthday was commemorated and one of his famous, but until then forgotten citations reemerged:

“If the gap between researchers and citizens is not bridged scientific work is unscientific because it disregards the dimension of acceptance and refusal and thus is damned to endorse an inhuman science which must end in catastrophes.”

What I want to convey here is the CONVERSION of hitech to HU-tech, based on historical experience and empirical findings of social sciences and humanities. In the remaining time I will try to operationalize this thesis with the means of science and technology journalism within the civil society.   
  
While journalism has a history of let’s say half a millennium science journalism has only existed for round about a century. If you wish to understand its origins and how it has evolved you must read US sociologist Dorothy Nelkin’s book “Selling Science. How the press covers science and technology.” I have studied mass communication at the Munich LMU university, but I never ran across such an insightful and critical, informative and enjoyable book on the history of science journalism.

Historically the profession has been nurtured by two species of people: professional scientists who detected writing and lay people who fell in love with science and technology. These two strands decorates Nelkin with beautiful citations such as:

“True descendants of Prometheus, science writers take the fire from the scientific Olympus (...) and bring it down to the people.” Or: “Other journalists maintain a more healthy scepticism towards news sources. But we, bless us, go in with our bright baby-blue pencils poised, faithfully recording anything our scientists - gods - tell us. Never does it occur to us that these guys too may have motives that are less than noble.”

The principal message of this book is that science journalists are naive about the subjects they report. But a critical mind is the main characteristic of being a journalist. Since this book was published some 30 years ago, science journalism has undergone professionalization. Nowadays trainees are educated to be skeptical. However it has not been determined yet whether science journalists should have a profound background in science or in journalism. In other words, science and technology journalism are still in the nascent state and are just seeing the light of the day.

Many modern curricula try to combine and bridge the two antipodes. However almost every international conference about science journalism which I have attended in the past 20 years had a session which raised the question why there are so many cheerleaders and loudspeakers in this profession. Which is to say that a lot of journalistic pieces on science and technology are supposedly not much better than PR.

Actually journalistic writing about science and technology requires the same skills and attitude as covering politics, culture, sports, however it has got another spin. While the latter fields are controversial per se and by their nature, the first one pretends to be more objective. In short: While general journalism is searching the truth, science supposedly is already delivering the truth or a piece of it.

But how truthful can it be, if research projects nowadays are increasingly financed by the industry which from the start on formulates the results it wishes to receive? Like everything and everyone else, science and technology are submitting to the economy, the growth dogma, shorter product cycles and built-in expiration dates, so where are the independence and truth-seeking mission as well as the ethical rules of research and applied research?

Distortion and corruption are trying to take possession of the ivory towers and research labs. The US tobacco industry could delay for 30 years research that smoking produces cancer. And whom did they employ to stop enlightenment: scientists! More recently, as a matter of fact until now, many US scientists ignore global warming and commonly accepted indicators that the observed avalanche of weather abnormalities around the globe is produced by rising levels of CO2. George W. Bush and Barrack Obama agree in one point: measures to protect the climate will harm the US economy.

In this regard, the peace nobel laureate Obama, during the US presidential campaign 2008 hailed as a messiah, measures up to Chinese political leaders and researchers who seemingly and admittedly have one commitment: to use science and technology as a vehicle to become the number one of the world. Period.

As we easily see, science and technology are deeply embedded and connected with politics and the economy. This seems to some extent natural, as we are all part of this. Many researchers and technologists are like you and me no crooks, but honest and righteous people driven by their passions and only sometimes trespass forbidden grounds. So, obviously, science journalists most of the time won’t stumble over outrageous scandals. How do we get then a journalistic handle on these topics?  
  
Life, earth, the cosmos don’t consist of black and white, as soap operas and shallow literature pretend, but there is to every topic, personality and issue a whole spectrum of colors. If you want to produce a good story, a radio broadcast or a video you should make use of these variations. This is what life and good reporting is all about.

As a very simple scheme and as described during today’s EUSJA training in a smaller circle I suggest to go by the SWOTs: the strengths and weaknesses, opportunities and threats of a research project or a new technology.   
  
Figure out who the stakeholders are, the interest groups around it including taxpayers, consumers, NGOs, advocates for and against it, who is footing the bill, what is known about competitors, how conform the expected results to existing regulations? Talk in person to your sources, gather as much information as you can, construct a story with ups and downs, just like a sinus curve, let your key people talk in their original tone, stick to a casual narrative tone and make difficult scientific stuff as simple as possible.

At the end you finish with a critical story which caters to the general public and the concerned citizens. It can be easily digested and contains strong countermoves which will make the experts reflect about their work. Sounds simple and is actually not as difficult as many lay people and also general journalists believe. I urge you to try it out and may bait you with the perspective that you will find yourself on an adventure playground. It is as much fun as it is meaningful.

If you do not want to write, and good writing is most of the time and for many writers a painful process, you might just want to organize a debate around the topic, invite the interest groups, have citizens ask questions to break the top down hierarchy and finish with a resolution which goes to the involved institutions as well as the media. With this type of Live Science Debate, embedded in an online format, we start to have very good experience in Germany. We hope that it will be introduced as a means of grassroots participation all over Europe.

So let’s assume you plunge into either writing, producing or moderating, what about the broader picture now? How does science and technology journalism in Europe cooperate, across borders, with journalistic associations, scientific institutions, the EU bureaucracy, above all: How can the making of science and technology journalists be professionalized?

There is someone here in the audience who has given quite some thought to this question over the past two years and worked hard to develop a comprehensive plan for implementation. Menelaos Sotiriou is the Secretary General of Athens based Science View, the Greek delegate to EUSJA and an associated member of the current board. Under his leadership and in conjunction with delegates from other associations such as Denmark EUSJA started a cooperation with projects of the European Union, for example NanoDiode which tries to dig into the controversial field of nanotechnology and thus provide researchers as well as policy makers and the public with more guidance.

This pays back to EUSJA. With the earned money EUSJA for the first time in its almost 40 years old history can afford to employ journalists who carry on the project, organize for example public debates outlined above and trainings for professional advancement in science journalism. This is quite a change and progress, a departure to new horizons, after EUSJA for decades had been restricted to just organize study trips for its members to research labs around the continent. In two weeks’ time the delegates from some two dozen European nations will meet for their Annual General Assembly in Vienna, discuss further proceedings and nail down the future course.

This keynote here in Thessaloniki and Greece shall help to focus our portfolio and is also a reverence to the current EU presidency of your country. May it help to pave the way for a bright future of science journalism for mutual benefits and with a highly practical agenda, after 30 years of theory and discussion. Let’s roll up our sleeves and implement these 9 to-do’s:

1. regular trainings in all essential fields and skills of the profession throughout the continent with the goal to provide the CRITICAL understanding of science INCLUDING technology with an emphasis on HU(man&woman)Tech;
2. PARTNERSHIPS with universities in Europe and beyond which offer curricula for communication, journalism and science journalism such as the Aristotle University;
3. broad-based COOPERATION with leading European scientific and technological organizations;
4. more journalistic study trips with more SCHOLARSHIPS, especially for beginners and newcomers, to research labs in Europe which could also offer trainings and provide networking opportunities;
5. close COLLABORATION with the science relevant branches of the European Union;
6. a highly visible POLE POSITION in the new EU Horizon 2020 program, an initiative to strengthen European research across national borders with the backing of the society;
7. strategic ALLIANCES with all science and technology relevant sections of society including science communicators and PI officers;
8. biennial European Science Journalism CONFERENCES in conjunction with the European Science Open Forum ESOF;
9. and above all, financial INDEPENDENCE and TRANSPARENCE, high journalistic ETHICS and INTEGRITY, in line with the Final Statement of the World Conference of Science Journalists Helsinki 2013, and, moreover, the strive to become, like political journalism, the SOCIETAL 4th POWER, apart from the executive, legislative and judicial power.

What do you think, could Aristotle have endorsed these demands? –

You may debate this during the forthcoming sessions of this conference. My time is up, I’d like to thank you very much for your attention and shall close with a philosopher of our days, Nicolás Gómez Dávila from Colombia (1913 – 1994, Bogotá). As a conservative he was highly sceptical about what we call progress, especially in terms of science and technology, thus he fits perfectly into what I said before. Three of his aphorisms may serve as a take-home-message for you:

The sleeplessness of a society in the trance of constant innovation makes her gaga.

Modern human beings are afraid of the destructive potential of technology, but its constructive potential is the real threat.

Maturity is the ability to step distinctively out of beaten paths.

Thank you!

Καλή νύχτα

ABSTRACT  
  
**SciTec comes 1st!**  
*Journalism as a critical force and 4th power for the societal reception of science and technology: 9 demands for action*  
Science seems to be trapped between technology and economy. The practical application of scientific findings has become a key economic factor. Bustling technological innovations are feeding the economy and its growth. Increasing environmental hazards such as global warming and the depletion of the planet indicate the need to change from quantitative to qualitative growth. It’s ruled by sufficiency, not efficiency. This could also help to recover from our poor mental health. Instrumental for the paradigm shift is a new critical understanding of science and technology. It conveys the transformation from hitech to HU(man)tech. This process will gain shape if science and technology journalists stop being cheerleaders, but live up to their traditionally, in some countries constitutionally assigned duty: to be part of the checks and balances of the society. The implementation of this requires a package of measures such as more comprehensive trainings and curricula, regular European conferences, strategic alliances with major societal stakeholders and bodies of the civil society, new journalistic techniques and platforms, above all a growing consciousness, the drive to experiment and, at the end, broad dissemination of best practices.   
  
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