Tobias Krantz: Tal vid American Association for the Advancement of Science

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Omständigheter

Ladies and gentlemen,

Let me begin by thanking our hosts for inviting me to come here today. Few countries can offer more obvious inspiration and input than the Unites States. And inspiration I need. In a few months, my government is up for election, so as the acting minister of higher education and research, I am currently hard at work renewing and reviewing our own policies. Being an academic, I am a firm believer in shared knowledge. So here I stand, ready to learn.

Some people like to put Europe and the US on two ends of the same pole, stressing our differences rather than our likeness. I personally think that that attitude is both politically nonsensical as well as intellectually flawed. In this time and age, cooperation between like-minded nations has never been more vital.

Global competition is growing more fierce, and that competition when ill-managed can produce a zero-sum game where someone's gain is automatically someone else's loss. But there are many examples on how competition can be made into a win-win situation for all parties concerned. Science collaboration might be one of the best.

At the beginning of the 21st century a new global economic and scientific landscape is emerging. The United States still remains the world's science and technology leader; for instance U.S. researchers published about a quarter of an estimated 760,000 research articles in peer-reviewed journals in 2008. The U.S., Japan's and the European Union's spending on research and development grew

between 5 per cent and 6 per cent annually the ten years ending in 2007. But other countries are catching up – the gap is narrowing.

A quite recent foresight study from the European Commission predicts an interesting perspective for the Unites States and for Europe. In 2025, nearly two thirds of the world population will live in Asia while the European Union will account for less than 7%. In terms of world production, the USA-EU-Japan triad will no longer dominate the world. A global middle class of about a billion people is emerging. In 2025, 90% of them will live in countries that we have grown used to regard as developing countries.

Deregulation, technological development and a strong focus on education have enabled previously poverty-stricken parts of the world to challenge the West in areas where we have been comfortably ahead for years. This is especially visible in terms of research. Emerging economies in Asia and Latin America are investing heavily in R& D. If they continue in the current pace, they will overtake Europe in about 10 years.

According to the Brussels-based think tank EIN, China and India are likely to account for 50% of the World GDP by 2060. The fact that developing countries rise out of poverty and are integrated in the global economy is of course very positive. More and more people around the world are able to taste the fruits of welfare and prosperity; this is really a remarkable success story for globalisation and economic freedom.

Some Europeans, and maybe some Americans, regard this new landscape first and foremost as a threat – I am not one of them. There is no doubt- and let's be frank on this point – that the occurring changes confront both Europe and the United States with a challenge. We should take on this challenge by seeing it, not as a threat, but as an opportunity – to reform our policies, to shape up our performance in order to be an attractive global partner both in the economic and in the scientific field.

So how can we meet this challenge? It is naturally important to safeguard and develop the principles that once made the United States and Europe strong in the area of research and consequently in the overall economic field. Among those are academic integrity, critical thinking and strong democratic values. This common ground of ideas will be important also in the future. But we

cannot rest: if you snooze, you lose.

As a political scientist, and as a politician, I love to talk about principles. But I am also well-aware of the fact that I must put my mouth where the money is. Last year, Sweden held the presidency of the European Union, making me responsible for chairing the EU-meetings on higher education and research. We went into the process with high expectations, and in many respects, I dare say, we made substantial progress.

The vision that we had – and still have – is in many ways inspired by the solutions you have chosen in the US. Your excellence in the area can be explained in many ways, but one of the most obvious is the amount of financial muscle you put in to the system. For me this was highlighted when the administration's new budget on research and development was presented Monday. Although a very tough economic situation it is a very strong budget with many important research investments for the future. The United States sends a strong message that it wants to maintain its position as a technological and scientific world leader.

One important topic when Sweden last year held the presidency of the European Union was how to deal with investments in education and research in a time of economic crisis. I think it is even more vital when there is an economic downturn not to be shortsighted but to focus on the long term perspective. Education and research are crucial to take on future challenges and to be better prepared to the crises to come. Although the times have been difficult I know that a lot of European countries have tried not to cut back on spending on education and research.

But increased spending is not enough. We also have to carefully scrutinize and reform our systems of financing so that they create the right incentives for excellent research and innovation. Let me briefly outline the main priorities for the Swedish presidency – and what we achieved, as they do connect to several challenges that I believe the EU and the US share:

Firstly, we wanted to set up and implement a new framework for cooperation on European research policy. Through the new treaty the European Research Area, ERA, got a clearer legal base. A higher degree of coordination is needed between what is done at EU level and what is done at national level, without

losing the necessary diversity of measures. Many of the instruments used are steered by national or regional conditions. This pluralism is a strength for research in Europe. However, we still believe that better coordination of research would increase the benefit of the investments made. In the same spirit, we wanted to look at simplification of the existing rules. The regulatory burden that researchers who request funds from the framework programmes are subjected to must be lessened if there are to be any research made. The conclusions the Council of Ministers adopted on this point were very strong.

One concrete result of the enhanced cooperation is the introduction of a new concept – joint programming. European countries can work together on a voluntary basis in joint programmes pooling their resources with the European Union acting as a facilitator. One pilot project has already been launched – a programme on Alzheimers and other neurodegenerative diseases. More joint programmes will follow.

Secondly, the discussion on the relevance of ERA was another cornerstone in our policywork. This is a general challenge for all nations with high ambitions in the field – to raise the legitimacy of research investments in the public eye. We believe that the citizens of Europe must be made aware of the fact that research investments make a difference in their lives and for those of future generations. To achieve this, we made it clear that we think European research policy and the next framework programme should focus on the major challenges we face, such as the climate threat, food and water security, access to sustainable energy, the ageing population and pandemics. I think this is a view that is now quite widely accepted.

Lastly, the Swedish presidency chose to give priority to issues concerning what we dubbed the knowledge triangle – that is, the interaction between education, research and innovation. Each of these three parts of the triangle are important, but we are certain that a lot of added value can come out of integrating the three approaches rather than looking at them separately.

This may sound obvious, but if you take the example of innovation, the interaction between the three legs in the knowledge triangle becomes apparent. Economic growth has always been the result of ground-breaking thought and innovation, of someone looking beyond the obvious. Therefore, the educational system must be able to produce both ”ordinary” scientific research

of high quality, while leaving room for the genial.

Unfortunately, all systems tend to conserve rather than to create. The famous scientist PM Medawar once said that ”the human mind treats a new idea the same way the body treats a strange protein, it rejects it”. This unwillingness to change and try out new solutions must change – in society at large, and not just in the universities. Maybe especially in Europe.

Because we must be honest. The current system is not working. Investing the amounts we do in research, we don’t get enough out of it. Some call the problem of turning scientific breakthroughs into profit ”the valley of death”. In Sweden we are less drastic and call it ”the research paradox”.

I’m fine with the fact that not all research can be commercialized. My own thesis in political science was a critical study of the debate on Swedish regions. It is not obvious that that thesis has an immediate commercial value and significance. And that’s okay, I’m sure it did some good anyway. But I’m not fine with great ideas, a new miracle drug or a groundbreaking new technique to combat global warming being left in a desk drawer just because our system for innovations wasn’t good enough.

There is a lot we, who are involved in research policy can do – I’ll come back to that.
But we cannot bridge the valley or solve the paradox by ourselves. We need help from other policy areas and from the private sector. Taxation policy and industrial policy are two important pieces of the innovation puzzle. A good entrepreneurial climate is another must. But, for today, let us focus on what we can do on our own turf.

One important measure, that you once again seem to master here in the States, is to make it easier to have multiple careers. It must be possible to combine a career in the academy and one in the private sector. Many researchers are hesitant to take a leap of fate and leave the safety of the university behind for the more insecure business world. I think the common thought, at least were I come from, is that an academic career will benefit more from publishing your results rather than commercializing them.

Brilliant researchers are not always great businessmen, although some are.

That's why I believe in match-making. Universities should be better at helping their employees find a venture capitalist to help fund the development of their own inventions.

Today's topic is science collaboration and I can tell you that between Sweden and United States there is, since many years, a very special collaboration. We hand out the Nobel prizes and the Americans receive them!

The number of American laureates carries a message. The United States is the most successful research nation in the world today and has been so for a long time. We Europeans have a lot to learn from the American example and the ability here to create environments for outstanding research, promote talent and support excellence.

The number of researchers in the US is 1,3 million. That's an impressive figure. But there are more than five million researchers in the world. That simple fact tells us that we all, even you Americans, have to face and relate to the fact that most of the world's research is being conducted abroad, outside our own national borders.

That highlights the need to learn from others, and now I am back to where I started when I began this speech. Scientific results are almost always achieved in a process of interaction. Science is, in its basic character, international. The people involved must know about and understand findings that are made by others.

Immigrants built the United States so it is old news here that people from other parts of the world can have an important impact. But I believe that to be especially true when it comes to research. We need foreigners in our labs and research teams. In many cases they make the difference. Scientists themselves are often excellent at networking and creating international communities.

But there is of course also a national dimension of research policy. In Europe people often tell me that we need to stop the mass exodus of talented researchers to the United States. I am convinced that that is the wrong conclusion. But there is cause for alarm if we cannot attract excellent researchers into our own countries.

The correct conclusion is that Europe, in particular, must improve our own performance and create such conditions for researchers that they will choose to come to us, come back to us or at least feel hesitant about leaving us in the first place. Our ability to strengthen each other through cooperation will be crucial to our competitiveness in the future. Openness, again, is the very basis for all academic activities. I think we are all aware of the fact that the consequences of terrorism, xenophobia and the threats to national security are graver to the academic world than to many other sectors – although I think society at large suffers from the effects.

To conclude – the pressure on our universities has never been greater. Decades ago the top universities in Sweden had to compete with each other for the best students, or the top researchers. Today, they have to battle Harvard, Oxford and the University of Kyoto as well. If that isn't pressure to modernize and improve – I don't know what is.

Still, some would say modernising the sector is impossible. I heard a somewhat ironic comment once when someone said: "Trying to reform a university is like rebuilding a grave-yard – you won't get much help from the inside".

But, all jokes aside, modernization is part of existing. Like everything and everyone else universities have to adapt and adjust to the world around them. And what could have higher potential to be more modern than an institution who's main purpose is to create new knowledge.

Still, the old structures are holding universities back. I can certainly say that that's the case in Sweden. We have laws and rules telling the universities what they can and, mostly, cannot do. As a new minister I was to decide whether the Royal College of Music could start and run a cafeteria on their own. Of course they really shouldn't have to ask me. We are preparing a reform to make the universities more free, as I know many other countries have done, or are planning on doing. It's not easy finding new ways for the universities to exist. I think we can learn a lot from other countries and exchange experiences.

In the end, autonomy and openness goes hand in hand. Both are needed to achieve high quality in research and education. Both presupposes faith in mans' creativity, curiosity and ability to take responsibility for his actions. None of them are possible without a system that values the scientific community for

being a self-critical image of society itself, an eternally dissenting voice, biting the hand that feeds him.

The greatest common challenge the EU and the US face is to hold on the ideals that have made us great and not give in to populism and self-righteousness. We must rise above nationalism and protectionism in this time of crisis. And if we manage, as we sometimes do, to gather our political resolve in these issues, I am convinced that the future is bright at the horizon. Thank you.

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