

HONORIS CAUSA AALTO, HONORARY SPEECH

(Helsinki, after-dinner October 7th, 2016)

-Madam President Tuula Teeri, EHUko Erretore Jaun agurgarria, Inaki Goirizelaia, Dean of Science Jouko Lampinën, honorands, ladies and gentlemen.

I thought my speech was going to be before dinner, but I am happy it was converted to an after- dinner speech, demonstrating the Finnish passion for change, for innovation, far from the Lutheran rigidity that I wrongly anticipated.

-I am overwhelmed to be part of such distinguished company and even more, to be asked to speak on their behalf.

-The varied locations and fields of distinction of todays honorands are eloquent testimony to the attraction exerted all over the world by Finland's achievements in technology. The evident national enthusiasm and cohesion certainly strike a deep resonance with someone from the Basque Country!

-The honor of today's award extends beyond me, to the level of excellence of the University of the Basque Country and the collaboration of our two universities. I am happy and honored to have our Rector, Professor Iñaki Goirizelaia, and our Vice Rector for Research, Fernando Plazaola, with us tonight.

-Finnish and Basque may both be non-indo-European languages but that does not mean that they have much in common, so my command of Finnish is very limited.

-I have better command of the second language of choice, English, though even here my level of competence has been criticized. In any case, the fact that I am speaking here is a good indication that the Finnish in general, and Academician Risto Nieminen in particular, have an appetite for risk.

But I am worried as well, because even if I could deliver a meaningful message, I am not so sure that my beautiful English accent would be fully understood in Finland. I cannot help remembering my first seminar at Cambridge at the end of my Ph.D. When I finished my presentation, Phil Anderson asked me: "Pedro where did you learn

English?” With my natural arrogance, I answered: “In Oxford Sir”, only to hear Anderson again. “Did you ask for your money back?” By the time I answered. “No, Sir, success was not guaranteed”, nobody in the audience was able to hear me above the roar of laughter.

... There is a poem written by Bernardo Atxaga, a famous Basque poet and novelist (with “v”, although he probably deserves the “b”). In this poem, Atxaga connects the Basque language with Finland to celebrate friendship and good moments that never should come to an end. This poem reflects my feelings today.

<i>Egun finlandiar bat</i>	<i>Zurekin hizketan jarraitzeko</i>
<i>Egun finlandiar luze bat</i>	<i>Zure hitzek on egiten didate</i>
<i>Berrogei egun arrunten</i>	<i>Lasaitu egiten naute barren</i>
<i>Luzerakoa behar dut</i>	<i>barrendik</i>
<i>Egun finlandiar bat</i>	...
	<i>Egun finlandiar bat!</i>

A loose translation could be like this:

<i>A Finnish day</i>	<i>To carry on talking to you</i>
<i>I need a long Finnish day</i>	<i>Your words make me feel</i>
<i>Longer than forty ordinary</i>	<i>good</i>
<i>dawn-to-dusk</i>	<i>Your words reassure me inside</i>
<i>A Finnish day</i>	...
	<i>A Finnish day!</i>

-The imaginative creation of Aalto through the fusion of three already distinguished Universities was a bold step which is already attracting worldwide attention and has been markedly more successful than previous fusions of this kind. It's particularly attractive to receive an Honorary Degree in such outstanding company from a University which is so clearly on an upwards trajectory!

-Amongst earlier examples of fusion I could mention the merger in 1860 of the two Universities in Aberdeen where one of the two Physics Professors had to be fired. Since the loser was married to the Principals' daughter, they could not be accused of nepotism, but they could perhaps be accused of lack of imagination, since his name was James Clerk Maxwell.

Maxwell was the first director of the world-known Cavendish Laboratory of the University of Cambridge. In Cambridge when I was a young Ph.D. student, I met Risto Nieminen and his wife Maio. It has been a real pleasure to see a brilliant young postdoc transformed into a world leader, he and his group at Aalto respected and admired worldwide. Maio, I am still sorry that my wedding invitation never reached Finland.

This year in his honorary speech at Aalto University, Sauli Niinistö, the President of the Republic of Finland, said: "For me the 'future' is the word that science brings to mind. I believe that science and research mean the future. The utilitarian character of science is essential to our economic development.

-We need to transform ideas into products, wealth and social well-being. Few countries get it right. Finland does. Finland is a small giant of medical technology. Health technology based on advanced knowledge is now Finland's largest high-tech sector!

It is also important to emphasize the cognitive character of science, and its capacity to fuel our imagination. Science is not a frozen body of dogma. It is an intellectual adventure, a human adventure that in the last years has changed our vision of the world and of ourselves.

In my opinion, and with respect and admiration for other branches of humanities, the conceptual structure of modern science is the most important collective cultural work of humanity. It is the most important collective work of art of humanity.

Science is economically crucial, esthetically beautiful and culturally important. Science is an international activity that transcends nations, races, religions and acts as a bonding force for humanity.

In his enlightening speech this morning Pilatti Kaivola emphasized the critical importance of basic research and teaching. I agree research and teaching are not only

complementary, but also indistinguishable. Teaching has made me a better researcher, and research has made me a better teacher.

It is true that the results of science and technology can be exported. One can also imagine a corporation moving its R&D overseas, but it is difficult to imagine that Cambridge or Aalto will decide to up and relocate. The point is that research universities are geographically rooted communities, and they are not easily exported. Excellence in basic research and human social interactions breed more effective technology and knowledge transfer.

Far from being neutral with respect to human values, science like art requires freedom, honesty and tolerance in order to foster originality and creativity. I resonate with the idea expressed at the Ceremonial Conferment by Dean Jouko Mapinen about the necessity of communicating science to society. We scientists have a special duty to explain to society what we do and why we do it. The big problems of humanity, food, water, energy, inequality and the rise of intolerance and fundamentalism will not have a solution with less science, but with more education and more science. We should raise our voices whenever fundamentalism and irrationality is proclaimed.

It is very appropriate that the University has the name of its famous architect.

I'd like to point out that at its frontiers, science is not so much a technical thing; it's architectural. An architect needs to understand and employ a lot of technical knowledge, but that's not the essence of architecture. I think what we appreciate in architecture and art is that it is work that opens our eyes to new possibilities, and the best science does that. Your science at Aalto is of that style. And that's why I and so many others admire and appreciate your work immensely.

-In the land of Sibelius, carefully constructed melodies we now learn are being used by Aalto researchers to move small objects around.

Finnish scientists have produced the first map of emotions and its reflection in the body: "Bodily maps of emotions".

Science is above all creativity. But creativity is not only knowledge. It is passion, conviction, decisions and actions, values clearly expressed in the motto of Aalto University:

Passion. Courage. Freedom. Responsibility and integrity.

Passion for exploration / **Courage** to influence and excel / **Freedom** to be creative and critical / **Responsibility** to accept, care and inspire / **Integrity**, openness and equality

Those values were clearly explained to me in a meeting I had a few years ago with your very young Prime Minister. To my question “What is the key of Finnish success?”, he answered: “Education, research, innovation, a culture open to the world, and a welfare system, not to abandon the one who is left behind.” This is an admirable program that shows great wisdom. The same wisdom was shown by the former president of Finland. With the Russian tanks on the border, he received a call from the Russian President telling him, “We are such good friends that we do not need borders.” The reply, “I am too old to govern such a big country.”

- This is a delicate moment for a speaker. He gets warmed up by talking and could go on and on. But that is precisely when he should approach the end, for his eagerness to continue is inversely proportional to the desire of the audience for him to go on.

Moreover, from my own experience, there is only one thing that can be more boring than a pre-dinner speech, and that is an after-dinner speech. I am sure you all feel an unquenchable desire to continue drinking. So I shall stop here.

Thanks again...

Pedro M. Echenique