Acceptance speech first annual YAE Prize at the joint AE/ALLEA/YAE meeting in Budapest sept 6 2017

Distinguished audience, in particular dear members of the Young Academy of Europe.

I feel extremely honoured for being awarded the first annual YAE prize, by an organisation representing dedicated, intelligent, hardworking European scientists. In 2013, I was appointed as member of the Dutch Young Academy and as of April 2015 I was allowed to chair this fine group of outstanding young and ambitious talents. This, ladies and gentlemen, was a ground breaking experience for me. Members of the Young Academy constitute a unique community of young scientists from all scientific disciplines that is critical and cooperative at the same time.

Without exception, members of the Young Academy focus on broad issues; the academic system; the relationship between science and society; our responsibilities in this respect and the ways forward we should explore. During all the discussions I had in the last years, I experienced an attitude within the Young Academy that was geared toward deeper understanding and synthesis, and without exception members contribute to the discussion in an altruistic and outgoing manner; never defending their personal agenda; never limited by the straight-jacket of their scientific discipline or their home university or faculty. The diversity of insights that they bring to the table is enormous and this further convinced me that an atmosphere of cooperation and diversity can make science and the university as a whole, strong, innovative and resilient.

I would like to thank Professor Swart for his extremely nice words, and would like to explain to you why I actually made the choice to stop working full time as an academic, and becoming an administrator, the word alone may arouse allergic reactions….

It was a difficult choice, in particular because I still believe I work in one of the most intriguing fields of study, namely the field of international justice, in which I focus on victims' needs, where topics relating to sustainability and resilience are at the heart of analysis. Some colleagues fiercely criticized

my decision to temporarily lessen my academic work from full time to part time. I hope that my explanation to you today is convincing, but even more so I hope that my dreams for the future of academia may prove sustainable in the long run, strengthening also the still existing resilience of academics and the institutions representing them, which is under serious threat at the moment. Universities are frequently in the focal point of attention because things are allegedly not going well. Governors and authorities are focusing too much of their attention on rankings and performance indicators. Employees complain about stress at work and feel frustrated by the enormous pressure they feel imposed on them by the university system. Students call for more participation and democracy, and want to be actively involved in the process of managing a university. Media feast on fraud cases and amplify any kind of academic abuse they notice. Society in general wants to know what universities can contribute on their account and call upon us for knowledge utilization.

Now what has this all to do with my decision to become a university administrator… I will tell you… It all started just some two years ago, when I received a personal grant from the Dutch National Science Organisation of almost 1 million euro. The same day a regional newspaper wrote in headlines '2.4. million grant money for three scientists from Tilburg University'. All media, from within the university and externally that followed in that week, presented the news as an individual achievement from my side, a solo act.

Time and again the same academics are put in the spotlight, and it appears that more and more resources go to a smaller group of individuals. These 'Scrooge McDucks of Science' see their stars rise, since their CV's include grant after grant. In the meantime, a large group of scientists feels frustrated, often because they failed to get their tenth submitted grant awarded, sometimes with a score not so far off from the lucky ones.

Does this say anything about their academic quality? Sometimes it does, sometimes it does not. Everyone who has obtained a grant, knows it is only partly based on your qualities as a scientist. To get a grant, you need to be a great scientist, but also an enthusiastic presenter, at times an excellent

statistic, a creative thinker, a competent manager, an inspiring teacher, a tireless workhorse and so fort and so on…

We all know that the high earners of science probably do not possess all these skills. **They lead a team**. A team that often participated in writing the grant proposal. A team that together possesses all the skills I just referred to. A team with one or more Isaac Newton kind of thinkers, meaning researchers who are brilliant in their work, but may not always have the skills to write a grant proposal with the required language and parameters, and may also not always possess excellent presentation skills. Such researchers may become lost in the shadow of the stars, that sometimes you don't see them at all anymore.

From the moment I received the grant in 2015, I emphasised it was a team effort. When I became rector of Maastricht University, I decided to physically leave the project in Tilburg. People asked me Why? Wasn't it my grant? My project? Nonsense I said. Together we had obtained the grant. My plea today is to shift the focus from the individual to the team, to talk about Team Science. Cause even Isaac Newton did not work alone!

I am convinced that the integration of team science in calls for scientific proposals but also in our evaluation mechanisms that measure performances of academics, could diminish the pressure on individual scientists but also on the current grant mechanisms, that both at the national and European level are overburdened by the number of proposals submitted. It will help stimulate our scientific endeavours and achievements and will increase attention for the vast group of academics that now miss out in the grants circus.

That cooperation improves scientific achievements is a known fact. Cooperation that crosses boundaries of disciplines, faculties, universities and national borders. From the history of science we know that major discoveries often take place in an environment free from competition. As the Roman author Publilius Syrus already wrote in the first age before Christ:

Ibi semper est victoria, ubi concordia est (freely translated: there is always victory when there is cooperation).

Research from the Nuffield Council on Bioethics shows that many academics are enthusiastic about more acknowledgment for teamwork and interdisciplinary research. Because it fosters innovation and better facilitates the translation from scientific knowledge to society.

What does this mean in practice? This first of all requires a culture change, at grant providing organisations such as the ERC and the National Research Councils, but also by scientists themselves. A new approach requires new indicators. Think of a Team Index instead of an H-index, where the T-index is determined by the diversity of competences within a team. Not only the CV of the principal investigator counts, but the cv's of all team members is included in the appraisal of an application.

I see many advantages in such approach in awarding grants and in evaluating scientific successes. Talented scientists, who for whatever reason may not have succeeded in obtaining a grant, no longer have to fear their future. Currently, many young academics connect their future to their chances of obtaining a grant or not, or their employer will do so. Also I thought when submitting my national grant application and a starting grant 'if I don't get it, I need to stop in academia. My chances to obtain another grant will be almost zero and I will make myself useful elsewhere…'.

I will not say myself that that would have been a major loss for science, but in many other instances that could of course be the case. The current individualistic focus leading to personality cults discourages researchers, maybe the Isaac Newtons of the future. And this, my dear audience, was one of the reasons I decided to become rector of Maastricht University.

The Team Science Committee of the National Research Council of the US has extensively described that the involvement of team members in the preparation of a scientific project increases the effectivity of the study. When the grant is awarded, this should mostly be spend to finance the team

that wrote the application, instead of only financing new post docs or phds. The development of the entire team is monitored in such approach.

As supporter of diversity, I cannot help to also argue for a diverse composition of teams. It seems an open door to say that the quality of scientific work improves because of diversity, but unfortunately this door is not that open everywhere. With diversity I do not only refer to a proportional composition between men and women, but also to a proper balance between nationalities, age and competences.

Luckily the trend of team science is growing. Internationally, in the last decade, we saw a rise in the number of granted projects that are led by more than one PI. For example in the US, by the National Science Foundation and the National Institutes of Health. Also these institutions view team science as an important approach to address the high application pressure and the low success rates, a problem many countries encounter.

Part of the transition towards team science is a discussion about the height of the grants awarded. A grant of 2.5 million is for one research group enormous whereas for another it is a tip. In several personal grant systems, the applicant feels more or less obliged to ask the full amount available where half could also have been sufficient. We should discuss whether this practice is not contradictory to the objectives we try to reach, which is enabling high quality research to flourish, which in some fields of study means that smaller grants may be just as, or even more effective. Not every field of science is as costly.

Allow me also to observe that not every academic discipline is adepted to cooperation. Where groups working in life sciences or the STEM areas jointly cross borders and boundaries all the time, I believe in social sciences and humanities there is still room for improvement. Also in my own field of study, international justice, academics have a tendency to rather compete than to cooperate.

The last few days you have been discussing topics relating to sustainability and resilience, now let me tell you that when reading the UN Sustainable Development Goals, you immediately note the interconnectedness of the various challenges (such as climate change, migration, food security, gender issues), which require a genuine effort to combine academic knowledge, cross disciplines and together as a united field take the responsibility to contribute addressing them.

If we want to take such responsibility, it also means remembering again why we wanted to engage in scientific work. Is it because we are thrilled when our H-Index improves, or is it when the knowledge we produce is being used to engage with our students, and to help contribute to the societal issues at hand that we study so passionately? For me the second objective has always been the most important one. However, if we are serious about taking responsibility, it also requires showing more courage, courage by European universities and research groups to make sharper choices in the areas of research where we can increase our level of knowledge and further develop it. Team science can be part of the strategy to reach this goal.

Developing costly expertise at different places or reinventing the wheel time and again will not help us in safeguarding the quality of our universities and in the long run it might even affect the sustainability of our institutions. Now I know academics are resilient, hard-working and intrinsically motivated people. But remember that it is these people that are our only human capital and we should cherish the enormous driving force they together bring to so many areas of study. But we should also be careful not to take it for granted. I challenge you to study the limitations of team science but also its potential and added value in order to maintain the quality of our work but, and to me just as important, also the happiness we perceive when conducting it.

Allow me to close my address with a few additional words on the value of cooperation. In particular in a period of time where the freedom of science and scientists is under pressure, such cooperation becomes even more important. After decades of increasing contacts between scientists worldwide, following the long period of détente after the Second World War and in particular after the fall of the

Berlin Wall, we see increasing violations of that freedom. Especially since 2008, when the financial crisis showed the world that our economic system is fragile, the Arab Spring which unfortunately developed into a fire of great proportions, renewed conflicts on the African continent and the invasion of Crimea by Russia, it has become clear that differences between and within countries increase. The inability of Europe to give an adequate response to the increasing numbers of refugees, along with the rising East-West tensions have led to great concern among sections of the population, strengthened populist parties and led to an increasingly strong orientation towards one's own country. These phenomena also affect the free movement and free expression of science.

The infringement of freedom of science has two forms. The recognizable easiest explicit form in which it is carried out can be seen, for example, in Turkey and Iran: a death penalty for a distinguished scientist, closing universities, dismissal of deans and scientists siding under the accusation of "opposition" or under the label 'enemy of the state'. This is characteristic of totalitarian operating governments. This category also includes the proclaimed admission, or the muslim ban, of the government Trump. Here are people (including scientists) discriminated against on grounds of nationality and faith.

More difficult to spot, but just as dangerous, is the more implicit form which aims to discrediting science, often through social media. This is not a new phenomenon: the denial of the facts by climate sceptics is a common example, as well as undermining scientific studies by the tobacco industry. This too we witness in US government statements on Twitter about climate and vaccinations. All these developments hinder open communication, exchange of ideas and collaboration between research groups, and thus free science, and lead to a reduction of the societal benefits thereof.

The above developments will initially affect the scientists and science in the countries where it is taking place. But they can affect us all. The world needs free science desperately, to preserve and promote prosperity and well-being, and to contribute to solutions for the enormous challenges we are facing.

I would like to thank the board and members of the Young Academy of Europe again for awarding me with this prize, which I happily accept because it comes from young dedicated scientists, who are my driving force to each and every day try to ensure that also future generations can satisfactory and happily work in what I believe is a privileged and beautiful sector to work in.