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**Federal President Joachim Gauck  
at the opening of the 65th Lindau Nobel Laureate Meeting  
in Lindau  
on 28 June 2015**

It is such an amazing feeling to look around this room. People from all around the world have come together to share something precious with each other in the coming days: their knowledge, their research topics and their brilliance. Perhaps this will give rise to an idea that will change all our lives tomorrow. It is a great pleasure for me to have been invited to the opening of the 65th Lindau Nobel Laureate Meeting.

The fact that I am able to experience a world conference of this nature in Germany fills me with gratitude. This place is of great symbolic significance. In comparison with 1951, when the first conference took place here in Lindau, German science has long been out of the shadows of isolation. I am among those who can remember the year 1951. I was eleven years old and lived on the other side of the Iron Curtain. It was not a good time. Here in the West, people were free but not yet prosperous. In the East, people were neither free nor prosperous. And the scientific community was also not free. Recalling the year 1951 just now, it occurred to me just how little we can take it for granted that our country was able to get to where it is today so successfully. For this, we also have to thank many people from all around the free world.

It was, of course, a long process for our country to win back something that was barely imaginable for many after the Second World War, namely international recognition and friends, and partners for an intensive dialogue. In short, trust.

Today, I would like to recall who was among the first to reach out their hand to the German scientific community. It was, Countess, your father Count Lennart Bernadotte who drew on his close connections to the Swedish royal family and who, above all, was committed enough and courageous enough to assume the role of "honorary patron".

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Many other patrons and partners of the Lindau Nobel Laureate Meetings joined him in the years that followed, including personalities and institutions from the worlds of science and politics, business and society – from home and abroad. The list would fill an entire book. I would like to thank you all most sincerely for supporting the Lindau project financially or contributing your ideas.

And, of course, I would also like to thank the Nobel Prize Laureates for offering their time and expertise for no financial reward in order to allow young, excellent up and coming scientists to share in their experiences. Esteemed Laureates, your commitment is priceless in every single way. Thank you!

If you take a look at the tightly packed programme for the coming five days, you will find that it contains many different subject areas – topics from the worlds of chemistry, physics, physiology and medicine that are currently highly topical, as well as interdisciplinary issues that are among the greatest facing humanity at large, such as fighting world hunger or responses to global warming. One of the great advantages of this conference is this interdisciplinary dialogue. Not only state boundaries are overcome, but also mental ones too when this happens – and this takes a long time. Prof. Schürer, I can well imagine that it took a great deal of persuasion and hard work to transcend the borders that we had become accustomed to for so long, often over the course of decades. Each discipline, as we know, has its own language, its own philosophical construct. However, the reality for which we seek solutions is a complex entity.

We have long known that the consequences of inventions and discoveries are sometimes wide-reaching and difficult to foresee. Even Alfred Nobel made this experience and could not predict that his most famous invention would one day be used for military purposes on an industrial scale. In our own age, too, it is not immediately foreseeable which innovations will be a blessing to mankind and which will entail great risks. This makes international conferences such as this so valuable. Science needs critical dialogue and, wherever possible, cross-border cooperation – not least for reasons relating to research funding. Outstanding projects such as CERN with the European particle accelerator and the International Space Station were only possible in the first place thanks to such cooperation. I will continue to support such forms of cooperation wherever I can.

I know, of course, ladies and gentlemen here in the room today, that you in particular are proponents of joined-up thinking. It is precisely people such as you who overcome borders. Sixty-five of you have already achieved what Alfred Nobel once termed the “greatest benefit” for mankind. And a hundred others, especially also young researchers, are eager to follow your example. You, esteemed audience, are the epitome of science’s capacity to surprise and of all

the hopes that are bound up with this quality. How often has research managed to overcome fundamental problems and helped millions, if not even billions, of people to enjoy a better life?

We therefore have good reason to be optimistic that science will continue to solve problems in the future, that it will achieve progress through innovation, and that it can make amends for – at least to a certain extent – the errors of the past. For me, the enormous potential of your work is beyond question. And yet we know that science is not only the driver of progress, that it is not only a solution or corrective force. Scientific findings can, in themselves, sometimes become an open question or problem. You, esteemed guests, sometimes experience this in your daily theory and practice. Even award-winning international joint research can quickly reach a point at which numbers and facts are no longer sufficient to justify one's own actions. People working in basic research – and especially in fields of application – who often set the course for other people, even for humanity, are of fundamental importance. Anyone who works in such situations without recourse to moral categories is guilty of inappropriate, even reckless, actions.

This problem is also on the agenda of this year's conference. Our French partners have given tomorrow's working breakfast the title "Science and Ethics". Countless lead-in presentations also touch on moral and social issues, sometimes even in their very title, such as "The Revolution of Personalized Medicine: Are We Going to Cure All Diseases and at What Price?"

While I am, of course, not in a position nor do I intend to preempt the debates of this conference, allow me to mention a motif that I find to be of central importance for such topics, namely human dignity. Article 1 of the Basic Law for the Federal Republic of Germany, which was adopted in 1949, reads: "Human dignity shall be inviolable."

I had to think of this sentence when I recently read newspaper reports on gene modifications to embryonic stem cells. What does it mean then for human dignity when human genetic material is modified – and even with the best of intentions as a way to prevent specific diseases? And what does the attempt to achieve genetic perfection mean for the dignity of others who are not perfect – i.e. for all of us?

Each technological possibility throws up new questions and sometimes also new conflicts. Parents of children with Down's syndrome tell me that others offer them their sympathy at the playground for, they say, missing the deadline for the amniocentesis, and just how remarkable it is that they are able to cope with the situation "in spite of everything". Are we experiencing here a creeping change to our social values – driven by scientific progress that is apparently justified by spending constraints and cloaked with moralising appeals to compassion and the avoidance of suffering? And

what consequences would such a change in mentality have for the acceptance of sick and aged people and those with disabilities?

Where exactly does the boundary between feasibility and desirability lie? Where is the final instance? And, above all, who is actually leading this difficult debate? And is it enough if this debate is only held now and then in ethics commissions, parliaments or in high-brow newspapers? I don't think that it is. The debate should be pursued across a broader base as it is about nothing less than our conception of the human being. How do we want to live tomorrow? Who do we want to be tomorrow? And which yardsticks do we want to measure both by?

Questions such as these need space to develop in society. We need discourses and agreements that go beyond the scientific community. Science can and should not bear its great responsibility alone. What we need is a critical public, and one not with occasional, but with enduring and intensive participation by scientists.

We are, unfortunately, a long way away from a truly broad-based debate of this kind. Many contemporaries shy away from fundamental questions or banish them to a point in the very distant future. Most people are more familiar with the Star Wars films than with the actual state of research on the universe or the rapid developments in the area of artificial intelligence. Stephen Hawking has, at any rate, recently made inroads into diverse specialist magazines, feuilletons and online forums with his warning at a London conference. His scenario of robots becoming so intelligent within the next 100 years that they could overtake humans and take control was a well-calculated provocation.

A provocation that we were evidently in need of hearing. Public opinion on the subject seems to be completely frozen stiff, however. This is the impression that you often get anyway. Either that, or it is panic-stricken time and again by phenomena such as genetically modified maize, for instance. It is often the case that great challenges and significant questions, the answers to which are about nothing less than the basis of our existence, are debated with an inherent lack of knowledge and with limited recourse to the respective scientific discipline. Indeed one of my perennial concerns, ladies and gentlemen, is the fact that these kinds of debates often lead to more uproar than enlightenment. And this is why we need you, as specialists, to lead such debates, or at least to guide them constantly and more intensively than before. That is my urgent appeal.

And what can we do to promote such a change? In order to promote a new public awareness, we evidently need far more international and disciplinary forums such as here in Lindau. And we need to build even more bridges. Physics and biochemistry can benefit from a dialogue with philosophy and political science, for example, just as medicine needs to see itself in constant relation to ethics. This is

why I wish to encourage you to take the spirit of interdisciplinarity and the spirit of Lindau back with you to your desks, your seminar rooms and laboratories.

Allow me to turn my attention to what I consider to be a particular problem of ageing societies. Core debates in society here are often dominated by an almost knee-jerk cultural criticism and by anxieties about the future. The human capacity to innovate, which is one of humanity's greatest talents, is undervalued. While it must constantly be accompanied by self-reflection, of course, we know that innovation is an opportunity to bring about developments that secure our future and which also compensate for the errors of the past. Innovation always requires us to be prepared to accept a certain amount of risk. Anyone who wants first to crunch all the numbers before putting an idea into practice stands little chance of success. The Internet is an extremely vivid example. We have been using it for years without being able to predict with any degree of precision where the digital revolution might take us. Because we trust that we will be able to keep the risks under control while at the same time taking maximum advantage of the opportunities.

The advantages of the Internet are pretty obvious, particularly for the scientific world. Online platforms and worldwide real-time communication have opened up an entirely new quality of work for research's age-old drive to connect, which is also to the benefit of large parts of the population. Never before have the world's intellectual treasures been at the fingertips of so many people. Never before has it been so easy – with the click of a mouse – to mobilise participants for a project. I will, quite deliberately, say nothing here about dangerous, tasteless or inhumane misuses of this technology. I am well acquainted with this topic and could probably talk about it at length, though not on this occasion.

I would like to stress just one thing at this juncture, however, which is that personal encounters – human contacts – cannot be arbitrarily replaced by technology. After 65 years, the Lindau Nobel Laureate Meetings continue to be so attractive because something happens here that works best between one human and another, namely inspiration! An email makes things infinitely easier, but it can be no replacement for a personal conversation that a Noble Laureate holds with a student to encourage them to broaden their focus, follow a new lead or to tread their own paths. In a way, inspiration also emerges as part of an interdisciplinary act – as a product of the brain and heart, and as the bridge between what we experience and what we dare to dream. As humans, we are characterised by our capacity to be inspired and by our ability to assume responsibility.

Young scientists,

With this in mind, you should make every effort to ensure that your research work lives up to high ethical standards, for which you will need an open and, wherever possible, international exchange of views. Above all, however, you will need the firm conviction that knowledge and knowledge building are one of the greatest resources of freedom – if not perhaps the greatest. Knowledge empowers people to no longer be afraid or dependent, to no longer be subjects of or surrendered to their fate.

One of Alfred Nobel's great legacies is the following insight:

The benefit of science is not only brought about for humankind, but is also achieved by humankind.

May this sentiment be your guide for this year's conference.