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Madam Secretary of State for Research, Development and Innovation; your excellencies, the ambassadors; your excellencies, the rectors; President of the Spanish National Research Council (CSIC); members of the jury; award recipients, ladies and gentlemen. Good evening to everyone.

In this ceremony, we have had the privilege of listening to those responsible for accomplishments that have allowed us to expand the frontiers of knowledge and artistic creation.

Our award recipients have shown us some facets of the effort to push the limits of the known world, the conceptual exploration process that examines reality through hypothesis and models, subjecting them to the demanding test of experimentation and empirical evidence.

They have told us how a discovery about bacteria's defense system has led to a powerful technique to modify the human genome with greater precision.

They have spoken to us about increasingly sophisticated and autonomous machines that are able to learn in a way that is similar to the human brain; of mathematical models that predict how the ecosystems and the entire planet will react to our careless and irresponsible behavior; of the fundamental impact institutions have on growth and well-being; of the biomedical advances that help the hundreds of millions of people who currently suffer from debilitating diseases, giving them hope and improving their quality of life..

Of formal tools that allow us to capture the meaning of data and the contrast of models in practically all fields of expertise.

Musical creation also makes it possible share intimate feelings and highly personal aesthetic visions, making everyone more sensitive.

As a whole, the contributions of our award recipients illustrate the enormous wealth and diversity of everything that has been discovered and created. It's impossible not to feel true admiration for the accomplishments that we recognize today and those who have made them possible.

Behind this diversity of content and fields is a shared structure: the rational thought on which the advancement of knowledge depends, and which is also expanded by scientific practice.

The collective conquest represented by the knowledge that has been accumulated over the centuries is the result of a way of thinking and of a continuously refined procedure, which as Karl Popper wrote, serves to bring us asymptotically closer to the truth, increasingly closer, but without ever actually touching it.

We have learned that no matter how powerful or elegant a theory may be, alternatives that are more complete or more compatible with empirical evidence will emerge sooner or later. This is the modus operandi of "trial and error" critical examination, the most precise search for evidence, the exposure of what has been found so that it can be subjected to scrupulous evaluation by one's peers, to rational debate. .

In the current complex environment, it seems essential to transfer this way of engaging with reality to the culture of society and to the public decision-makers and to the mindset of the private sector.

In this day and age, where we live with exposure to a growing data flow, with technologies that interconnect and enrich society with information, it is more necessary than ever before to practice and promote the Greek system of rational thought, expanded and refined by the spectacular development of science.

It's not about converting all citizens into scientists, but about something more basic: understanding that there is a line that separates mere subjective opinion from knowledge that has been confirmed and validated by the scientific community.

In other words, understanding this – giving science a higher status as the central element of culture – would make it possible to fight the fanaticism and exclusionary ideologies that, although outdated, still exist among some sectors of the population; or the spurious interest of lobbies; or the everyday invasion of messages and content that, deliberately or not, feed attitudes and behaviors that ignore or oppose superior knowledge and evidence.

One form of inequality with the greatest consequences is that which leaves large sectors of society marginalized from knowledge. When this group of outsiders or skeptics of validated knowledge includes public decision-makers with a tremendous capacity to impact the collective agenda, the situation is particularly concerning and requires an extra effort to ensure that science is perceived as culture, as a system of coordinates of the individual and a collective mindset.

It was precisely for them that we created the BBVA Foundation Frontiers of Knowledge Awards as a way to recognize and raise the profile of those who create knowledge, praising their courage in facing challenges successfully and in taking advantage of the enormous opportunities of our time.

The examples that the award recipients set for us with their curiosity, perseverance, and passion in the search for a solution to a scientific mystery or in the process of creating a work of art, are an inspiration for us all.

We need these models if we want to reduce the severe cognitive inequality that currently divides society – the gap that divides those who really live immersed in the knowledge society and those who use their products without thinking, without wondering if what's behind the screen or the click is magic or science.

We also need to know where everything begins – the seed from which everything else grows. This is none other than the desire to know, an intrinsically human instinct that makes the search for knowledge a valuable end in itself, a good of incalculable value.

The value of knowledge for innovation, and problem-solving is frequently stressed. Meanwhile, the pleasure of discovery – the act of revealing or creating something – is discussed much less. We believe that this element should come to the forefront. First, because it is the expression of a human impulse, but also because of the transformative effect of knowledge and culture.

What we know determines our view of the world, our system of coordinates to understand reality and therefore, our attitude and relationship with everything else. It is not an exaggeration to say that knowledge affects character, a society's vitality and its future.

Then there are the applications, the practical solutions. The search for knowledge culminates in innovation sooner or later. But the best innovation story shows that it does not follow a linear process – innovation is evasive. It isn't usually found where

you look for it, rather it usually emerges from unanticipated crossings and intersections.

Our foundation designed the Frontiers of Knowledge Awards based on the most absolute respect for the rules of knowledge and artistic creation. Its architecture replicates the knowledge map of the 21st Century.

We wanted to give the same status to classic categories like Basic Sciences or Biomedicine, and younger, but equally essential disciplines, especially to two that are related to the core of conserving life: the category of Climate Change and Ecology and Conservation Biology.

Throughout the nine editions and from different angles, climate change science has warned us and made us aware of the severity of the situation, also showing us that there are options to face the monumental challenge, with the only condition that everyone – individuals, companies and governments – relentlessly take on this collective challenge, backed along the way by the best knowledge.

Information technologies have been labeled “the technologies that define our era.” Three decades ago, Nobel Laureate Herbert Simon wrote that “we would coexist on the planet with computers.” That future is now the present.

We have an incredible number of processors “nestled” in a wide range of devices, which the late Director of MIT’s Computer Science Laboratory, Michael Dertouzos, called “the hidden chip.” One of the computer scientist’s convictions was that: “We made a big mistake 300 years ago when we separated technology and humanism. It’s time to put the two back together.”

Today's processors are also connected to each other and with humans and have increasingly intelligent functions and autonomy. This forces us to rethink all the processes and structures, and even our own identify.

On this basis, a category designed to recognize the most significant contributions in a domain that is revolutionizing all facets of social life – from economics and culture to entertainment, politics and collective action – could not be missing from the Frontiers of Knowledge Awards.

The classic categories of knowledge have only become more important, continuously renewing themselves and producing revolutionary milestones – like what occurred in biomedicine with genomics and related developments, for example, which leads to more precise, personalized and efficient medicine.

And at the same time, it provides opportunities to apply the best reflection and ethical and legal analysis to the limits of their applications. Once again, we should unite science, technology and humanism as Dertouzos suggested.

The explosive volume of quantitative and qualitative data is another characteristic of 21st Century science and of all areas of today's social practice.

The science of statistics is currently undergoing an accelerated transformation process, with a growing overlap with computer science and artificial intelligence. This allows us to extract knowledge from data and apply it to the radical innovation of processes and practices across all domains. This discipline is included and recognized in the Basic Sciences category of the Frontiers of Knowledge Awards.

Part of this large amount of data come from, and are managed by, our professional relationships and everyday financial transactions, either as individuals or as

companies. In this respect, it is also necessary to improve society's culture, incorporating the economic and financial education that economics provides, us.

Pioneering economic research, in connection with other social sciences, is helping us to understand the decisive role institutions are playing in countries' growth and well-being. Institutional design and public policies will increasingly need to be based on the best knowledge from the field of economics. For this reason, economics is another essential category in this family of awards.

In the parts of the planet that are suffering from poverty, our values and ethical principles urge us to cooperate. But so does "selfishness" – being aware that the well-being and security of advanced societies will not be able to be maintained without facing the challenges of the most vulnerable places and populations.

With the Development Cooperation category we want to recognize the actions that represent significant progress in one or more of the facets that hamper society's growth, well-being, freedom and rights.

The vector underlying the Frontiers of Knowledge Awards is, without a doubt, the desire to make the rationality associated with science permeate and becomes central to our culture and a guide for decision-makers.

The other, equally essential vector is that of the arts, represented in this family of awards by contemporary music. Without the artistic dimension, culture would be unbalanced. The arts are constantly engaging in the innovation and experimentation process, which is just as radical as in the practical sciences, and provide an essential contribution to expanding and enriching our perceptions and emotions, our perspective of what surrounds us and our internal universe.

I mentioned earlier that the BBVA Frontiers of Knowledge Awards are based on scrupulous respect for the idiosyncrasies of the scientific and cultural community.

Scientists and creators from around the world nominate and select the best among their peers every year. We are aware that many more deserve to be distinguished because science and creation are cooperative endeavors that are based on others' contributions. For this reason, the Awards pay homage to the entire community of researchers and artists.

I would like to thank the valuable contributions of the many researchers from our multidisciplinary research institute, the Spanish National Research Council (CSIC) in the process of evaluating the nominations.

In consultation with the CSIC, our juries consist of renowned experts in each area, who act with complete Independence and a commitment to excellence. Their credentials and expertise ensure that the awards follow the correct path in the increasingly complex and interdisciplinary knowledge map, enabling the identification of truly significant milestones in each discipline and area.

As I do every year, I would like to express my sincere gratitude. The excellence of our award recipients is proof of their magnificent work.

Before I conclude, I would like to emphasize how proud I am that the BBVA Foundation in Spain continues to reinforce a global initiative that recognizes the contributions that offer us new and valuable opportunities.

The entire BBVA Group, which has made its commitment to knowledge, innovation and ethics its identity, recognizes and is very proud of this family of Frontiers of Knowledge Awards.

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My warmest congratulations to all the award recipients and their families, sincere thanks to all who were nominated and the juries.

And a big thanks to all of you as well, distinguished representatives of the community of science, art, companies, the diplomatic corps, the media and other institutions for being here and being an integral part of this celebration of knowledge and culture.

Thank you very much.