SCIENCE FOR SOCIETY

During the second part of the 20th century, the social contract between science and society was merely a tacit agreement foreseeing that public money would finance the research that would sustain technology development and innovation and enhance the socio-economic well-being of our society. The spheres of science, politics, and society were largely separate. Today this model has changed. Chapter 7 of the EPS Challenges for Physics deals with this issue.

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▲ Talking birds as a symbol for open communication and education. ©iStockPhoto.

In the last 25 years, this model has been broadly questioned. Blurred ethical standards and catastrophes in addition to the dissemination of "fake news" have repeatedly undermined the faith in science. Innovation has not always been driven by the Common Good or the needs and expectations of the citizens. Most importantly, there has been an increasing awareness that the world is facing new drastic challenges, from climate change and food security to migrations and energy supplies, which will determine its future.

Against this background, a new normal is arising. It is about the interplay of all sciences, including natural, social, and human sciences, without which societal challenges cannot be solved: education and training must be rethought to foster inter- and trans-disciplinarity. It is about a democratic governance of science and innovation which, while protecting the inspiration and creativity that

drives research, facilitates the participation of all stakeholders in developing choices and processes. It is about greater expectations from citizens regarding communication and accountability from scientists at a time when the internet revolution and social media make it possible for all to access, understand and share the knowledge and scientific data. At the dawn of the open science era, it is also about reaping the benefits of Information Technology and Artificial Intelligence to consolidate and speed up the research and innovation process. Finally, it is about trust between citizens and science, which is conditioned by aspects of research such as ethics, integrity and transparency.

A global goal is to generate the new knowledge that will help to better understand and address the major challenges of our time and facilitate the transfer and integration of scientific findings into politics and society. But science has its own limits, being either theoretical, experimental, ethical or philosophical.

Since all these issues will determine the future of scientific research – and ipso facto of mankind – they are addressed and discussed in in a separate chapter of the EPS Grand Challenges. Chapter 7 of the EPS Grand Challenges is divided into five main sections: Education and research in an interdisciplinary environment, Science with and for the citizens, Open communication and responsible citizens, Science and ethics and finally the Limits of science. ■

> **“We need a new social contract between science and society”**

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