

Sciences and Society

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Relationships between science, technology and society underwent a profound renewal at the turn of the 2000s. This renewal is due to several factors: (i) an accumulation of knowledge on the science-society interface from *Science and technology studies* (STS) domain since the end of the 20th century; (ii) the growing concern for sustainable development; (iii) the amplification of knowledge circulation by digital communication media; and (iv) the massification of education, particularly at tertiary level. These main factors have resulted in a more pertinent questioning of the impact of science and technical objects on society, often imposed by a top-down, linear mode of innovation. They also make it possible to question the relevance of scientific studies in relation to the living questions asked by society, as described in the technical democracy literature.

In order to remove a possible ambiguity, we use the term “sciences” to refer to all disciplines subject to research, whether formal, natural, social or human, as well as those from more applied fields such as health, economics, environment, management, etc.

This theme is a part of a context in which our development model is outstripping the earth system’s capacity for sustainability. Our societies are faced with major societal challenges (mitigating climate change, remedying biodiversity loss, rethinking our access to resources, regulating economic crises, containing pandemics, etc.). Collective action finds itself operating in situations of uncertainty and complexity, subject to constant dynamic change. Growing awareness of these issues is being expressed in various activity (industrial, commercial, agricultural, scientific) or sector (cultural, etc.). It is also expressed at political and institutional levels and at all territorial levels, as well as in a variety of citizen initiatives. If the effects are global, it’s hard not to wonder about the inherently complex multi-scale correspondences, which require us to think of the required transformations in terms of non-performative processes that are nonetheless highly constrained.

This vision raises at least two observations. The first is that we need to innovate, as existing solutions are unable to resolve the problems identified. The second observation leads us understanding transitions as unstable periods that need to be explored. In a context of “post-normal science”, where uncertainties and decision stakes are high, we need to broaden the range of stakeholders in research processes, and devise new modes of innovation.

This context poses a particularly wicked double challenge for our program, requiring transdisciplinary treatment of research and innovation topics. Indeed, these topics require scientific contributions which are characterized by hyperspecialized research environments. But they also require the introduction of knowledge from outside the research world which can enable greater social relevance. However, this knowledge of experiences or uses, for example, is generally highly situated.

In order to respond to these challenges, our program proposes to analyze and reflect on new ways of creating, disseminating, appropriating and using scientific and technical knowledge,

open to the society in a participatory way. It echoes the knowledge society promoted by the European Commission, which, in a report published in 2007, asserts that such a project is not self-evident, particularly when it comes to the co-production of knowledge and innovations. This orientation leads us to focus on three priority topics that can be drawn around an inverted arrow of time: future, present, past.

Topic "Participation"

"Projecting oneself into the future, empowering stakeholders"

Citizen participation is clearly invoked in national and European public research and innovation policies. Today, this logic is reflected in a vast galaxy of approaches and practices. This broadening of participation, to include different stakeholders from professional researchers in scientific investigation and/or the design of artefacts, enables us to rethink action and explore the links between science, technology, innovation and the social, economic and cultural world. Numerous questions arise, both in terms of epistemology and methodology, and in terms of the appropriation and impact of this type of approach. What is the right methodology for a given situation? What kind of intermediation is required in the research and design process? Which actors for which inclusiveness? What timeframe? To what extent can the results be appropriated for innovative action?

Topic "Materiality"

"The appropriation of science and technology in the present time"

We are witnessing a rapid diversification of both the places where knowledge is produced and the places where it is exchanged. These interfaces are changing the values, motivations and skills of a wide range of partners in civil society: associations, non-governmental organizations, centers for scientific, technical and industrial culture, fablabs, third-places, etc. These places can be complemented by other, more ad hoc instruments, such as specific calls for projects. What kind of public policy is needed to support these interfaces? How can they be appropriated by local authorities? What actions should be taken to offer optimized resources and tools?

Topic "Evolution"

"What can be learned from the past?"

Knowledge production has never been greater. And yet, it has never been able to solve the major societal challenges of our time. This paradox is perhaps due to the fact that innovation processes are still strongly influenced by a linear process. However, the way from knowledge to innovation is a much more complex process, as many innovation biographies suggest. The heuristic scope of a socio-historical perspective on science and technology enables us to imagine innovative concepts capable of providing unprecedented responses to the major challenges of the contemporary world. This vision would however not be complete without considering the question of the meaning of the projected innovations, both for the user and for society as a whole.

Does the past have no value to think about our present and, even more so, our future? What can we learn from the past to design innovations that make sense for society? What are the key concepts and main contributions of the history of technology to innovation? How can the history of technology help us to imagine the future?